A 37-year-old man is admitted to the hospital for right lower-lobe pneumonia. He is given antibiotics, and his shortness of breath and fever improve by the second hospital day. However, he now has new-onset abdominal pain, diarrhea, and severe muscle aches. The patient has no history of gastrointestinal conditions or prior surgeries but does admit to recreational drug use. Temperature is 36.8 C (98.2 F), blood pressure is 124/80 mm Hg, and pulse is 88/min. On examination, the patient appears uncomfortable and anxious. Pupils are dilated and there is prominent lacrimation. Abdominal examination reveals hyperactive bowel sounds without tenderness or distension. Which of the following is the most likely diagnosis?

- A. Alcohol withdrawal
- B. Amphetamine intoxication
- C. Antibiotic side effect
- D. Benzodiazepine withdrawal
- E. Cocaine intoxication
- F. Nicotine withdrawal
- G. Opioid withdrawal
- H. Viral gastroenteritis

Submit

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- A. Alcohol withdrawal (3%)
- B. Amphetamine intoxication (3%)
- C. Antibiotic side effect (3%)
- D. Benzodiazepine withdrawal (2%)
- E. Cocaine intoxication (4%)
- F. Nicotine withdrawal (2%)
- ✓ G. Opioid withdrawal (78%)
- H. Viral gastroenteritis (0%)

Omitted
Correct answer
G

78%
Answered correctly

02 secs
Time Spent

03/08/2020
Last Updated

Explanation

Common withdrawal syndromes		
Substance	**Symptoms**	**Examination findings**
Alcohol	Tremors, agitation, anxiety, **delirium**, psychosis	**Seizures**, tachycardia, palpitations
Benzodiazepines	Tremors, anxiety, perceptual disturbances, psychosis, insomnia	
Heroin	Nausea, vomiting, abdominal cramping, diarrhea, muscle aches	**Dilated pupils**, **yawning**, piloerection, **lacrimation**, hyperactive bowel sounds
Stimulants (eg, cocaine, amphetamines)	Increased appetite, hypersomnia, **intense psychomotor retardation, severe depression ("crash")**	No significant findings
Nicotine	Dysphoria, irritability, anxiety, **increased appetite**	
Cannabis	Irritability, anxiety, depressed mood, insomnia, decreased appetite	No significant findings

This patient is experiencing the classic symptoms of **opioid withdrawal**. Opioid withdrawal can start as soon as 6-12 hours after cessation of a short-acting opioid such as heroin and usually peaks within 24-48 hours. Symptoms include nausea, vomiting, **diarrhea**, abdominal cramping, and myalgia. It is generally nonlife-threatening and vital signs are usually normal. **Dilated pupils**, prominent piloerection, and **hyperactive bowel sounds** are seen on examination. Opioid withdrawal can appear similar to other withdrawal or intoxication syndromes, but certain findings, including **lacrimation** and **yawning**, are fairly specific.

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Individuals who have been taking chronic prescription opioids, such as cancer patients, can also develop opioid withdrawal on abrupt discontinuation or marked reduction in usage.

(Choices A and D) Alcohol and benzodiazepine withdrawal are two of the few potentially fatal drug withdrawal syndromes. Symptoms of alcohol withdrawal typically begin after 12-24 hours and are typified by autonomic hyperactivity (eg, tremors, agitation, diaphoresis, tachycardia, hypertension). Onset of benzodiazepine withdrawal depends on the half-life of the specific agent and is characterized by tremors, anxiety, perceptual disturbances, dysphoria, and psychosis. Alcohol and benzodiazepine withdrawal may also lead to seizures.

(Choices B and E) Amphetamine and cocaine intoxication are marked by euphoria, increased vigilance, psychomotor agitation, tachycardia, hypertension, and hyperthermia. As in opioid *withdrawal*, pupils are dilated with stimulant *intoxication*. However, this patient's gastrointestinal upset and lacrimation are more typical of opioid withdrawal.

(Choice C) Antibiotic use may be associated with diarrhea and other adverse effects. However, this patient's history of recreational drug use and relatively specific signs of opioid withdrawal (eg, lacrimation) make opioid withdrawal more likely.

(Choice F) Nicotine withdrawal is commonly seen in the inpatient setting in chronic tobacco users. Besides cravings for cigarettes, symptoms are generally mild and include dysphoria, irritability, anxiety, and increased appetite/weight gain.

(Choice H) Viral gastroenteritis is characterized by diarrhea, vomiting, and fever.

Educational objective:
Opioid withdrawal is marked by mydriasis, abdominal pain, diarrhea, piloerection, lacrimation, and yawning. It is generally nonlife-threatening, unlike withdrawal from alcohol and benzodiazepines.

References

- Update on pharmacotherapy for treatment of opioid use disorder.

A 13-year-old boy is brought to the office due to anxiety and behavioral problems at school. Although he has good grades, he frequently feels overwhelmed at school and his mother worries that he is socially awkward and has no friends. The patient often appears anxious and uncomfortable in new social situations. He insists on sitting in the same row and seat in every class and has had several inappropriate outbursts when told by teachers that this was not possible. After school, the patient prefers to spend time at home. His mother observes that he is obsessed with dates and comparing solar and lunar calendars and can discuss this for hours, but has difficulty shifting to other topics of conversation. The patient was born at full term, and developmental milestones were within normal range. Physical examination is unremarkable. Which of the following is the most likely explanation of this patient's behavior?

A. Autism spectrum disorder
B. Obsessive compulsive disorder
C. Obsessive compulsive personality disorder
D. Schizoid personality disorder
E. Separation anxiety disorder
F. Social anxiety disorder

Submit

A 13-year-old boy is brought to the office due to anxiety and behavioral problems at school. Although he has good grades, he frequently feels overwhelmed at school and his mother worries that he is socially awkward and has no friends. The patient often appears anxious and uncomfortable in new social situations. He insists on sitting in the same row and seat in every class and has had several inappropriate outbursts when told by teachers that this was not possible. After school, the patient prefers to spend time at home. His mother observes that he is obsessed with dates and comparing solar and lunar calendars and can discuss this for hours, but has difficulty shifting to other topics of conversation. The patient was born at full term, and developmental milestones were within normal range. Physical examination is unremarkable. Which of the following is the most likely explanation of this patient's behavior?

- ✓ A. Autism spectrum disorder (70%)
- B. Obsessive compulsive disorder (9%)
- C. Obsessive compulsive personality disorder (12%)
- D. Schizoid personality disorder (4%)
- E. Separation anxiety disorder (0%)
- F. Social anxiety disorder (3%)

Omitted
Correct answer
A

70%
Answered correctly

01 sec
Time Spent

07/03/2020
Last Updated

Explanation

Autism spectrum disorder

Autism spectrum disorder	
Clinical features	• Deficits in social communication & interactions with onset in early development ◦ Sharing of emotions or interests ◦ Nonverbal communication ◦ Developing & understanding relationships • Restricted, repetitive patterns of behavior ◦ Repetitive movements or speech ◦ Insistence on sameness/routines ◦ Intense, fixated interests ◦ Adverse responses to sensory input • May occur with or without language & intellectual impairment

This patient's behavior is most consistent with mild, high-functioning **autism spectrum disorder** (ASD). Patients diagnosed with ASD later in childhood and adolescence frequently have normal or near-normal language and intellectual ability and come to clinical attention when social and academic demands increase, exposing a lack of flexibility and social skill deficits (more severe ASD is usually diagnosed by age 5). Key features of ASD include **deficits in social communication** and reciprocal social interactions as well as **restricted, repetitive interests** and **stereotyped behaviors**.

This patient's lack of friends, social isolation, insistence on sameness, intensely fixated interests, and trouble taking turns in conversation are characteristic. Patients with autism have difficulty interpreting and responding appropriately to nonverbal aspects of communication. Abnormal eye contact, stilted, overly formal speech, abnormal sensory sensitivity, and unusual repetitive movements (hand flapping, rocking) are other common findings.

(Choice B) Obsessive-compulsive disorder may also present with obsessive interests and insistence on routines. However, this patient lacks the intrusive obsessional thoughts and compulsive rituals performed in response to these thoughts required for this diagnosis (eg, thoughts of contamination leading to cleaning rituals).

(Choices C and D) Personality disorders are not diagnosed when the behavior is better explained by another mental disorder and are generally not diagnosed before age 18. Patients with obsessive-compulsive personality disorder are preoccupied with orderliness and control but do not

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(Choices C and D) Personality disorders are not diagnosed when the behavior is better explained by another mental disorder and are generally not diagnosed before age 18. Patients with obsessive-compulsive personality disorder are preoccupied with orderliness and control but do not have deficits in social communication. Patients with schizoid personality disorder are socially isolated and disinterested in relationships, but do not exhibit the restricted interests and repetitive patterns seen in ASD.

(Choice E) Separation anxiety disorder is characterized by developmentally inappropriate and excessive anxiety related to separation from the primary attachment figure.

(Choice F) Patients with social anxiety disorder typically have normal communication skills and an interest in socializing, but they avoid social situations due to fear of being judged. In patients with ASD, social anxiety is related to their lack of social skills.

Educational objective:
Patients with milder forms of autism spectrum disorder frequently have normal language and cognitive development. Characteristic features include deficits in social communication and reciprocal social interactions, restricted interests, and behavioral rigidity that become more apparent as social and academic demands increase.

common findings.

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References

- Differentiating high-functioning autism and social phobia.
- A systematic review and meta-analysis of cognitive-behavioral therapy for anxiety in youth with high-functioning autism spectrum disorders.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Autism spectrum disorders
Subject	System	Topic

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A 32-year-old woman comes to the office due to long-standing anxiety. She reports being excessively worried about everyday events and constantly feeling tense and unable to relax. The patient is diagnosed with generalized anxiety disorder and treated with a selective serotonin reuptake inhibitor. She returns to the office for a 2-month follow-up and reports that her overall anxiety has improved, but she continues to have periods of increased anxiety before bedtime that keep her awake at night. The patient works as a 911 emergency dispatch operator and would be willing to add a medication at bedtime but needs to be "clearheaded" for work. Which of the following medications is most appropriate for this patient's condition?

A. Chlordiazepoxide

B. Diazepam

C. Flurazepam

D. Lorazepam

E. Quetiapine

Submit

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- A. Chlordiazepoxide (19%)
- B. Diazepam (16%)
- C. Flurazepam (9%)
- ✓ D. Lorazepam (34%)
- E. Quetiapine (20%)

Omitted
Correct answer
D

34%
Answered correctly

01 sec
Time Spent

01/29/2020
Last Updated

Explanation

Duration of action of common benzodiazepines	
Short (half-life <6 hr)	Triazolam, midazolam

Duration of action of common benzodiazepines	
Short (half-life <6 hr)	Triazolam, midazolam
Intermediate (half-life 6-50 hr)	Oxazepam, alprazolam, lorazepam, clonazepam
Long (half-life >50 hr)	Diazepam, chlordiazepoxide, flurazepam

Although antidepressants (selective serotonin reuptake inhibitors and serotonin-norepinephrine reuptake inhibitors) are first-line medications for generalized anxiety disorder (GAD), benzodiazepines are also effective and can be used as adjuncts in partial responders. Benzodiazepines are typically divided into categories based on their half-lives (eg, short, intermediate, long).

In selecting a benzodiazepine for this patient, it is important to minimize undesirable **side effects** (eg, sedation, fatigue, impaired judgment), especially given the nature of her work. This is best achieved by prescribing a **short**- or **intermediate-acting benzodiazepine** such as **lorazepam** (average half-life of 12 hours) at bedtime, which will lower her anxiety, help her fall asleep, and be less likely to impair her daytime cognitive performance. Benzodiazepines with longer elimination half-lives are associated with prolonged side effects and should be avoided when trying to minimize side effects.

(Choices A, B, and C) Chlordiazepoxide, diazepam, and flurazepam have longer durations of action compared to lorazepam. These agents are more likely to result in prolonged side effects (eg, daytime sedation, impaired judgment), which are undesirable considering this patient's job.

(Choice E) Quetiapine is a second-generation antipsychotic that is associated with numerous potentially severe side effects, including sedation, weight gain, and metabolic syndrome. It is not recommend for treating insomnia in patients without psychosis.

Educational objective:
When benzodiazepines are used in the treatment of anxiety, drug selection should consider the medication's duration of action. Short- to intermediate-acting benzodiazepines (eg, lorazepam) are preferred in situations in which prolonged side effects of sedation and cognitive impairment must be minimized.

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References

- Diagnosis and management of generalized anxiety disorder and panic disorder in adults.
- Current diagnosis and treatment of anxiety disorders.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Anxiety
Subject	System	Topic

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A 24-year-old man comes to the physician due to excessive daytime sleepiness. The patient is a college student whose symptoms started around age 12, when he began needing more sleep than his peers to feel refreshed. Two years later, he started having daily episodes of sudden weakness, consistently triggered by laughter or crying, in which his head would nod or his knees would buckle for about 30 seconds. The patient also describes times when he was unable to move for several minutes after awakening from sleep. He mentions nightly dreams that seem very real, often featuring activities that he had been engaged in during the preceding day. If measured, which of the following compounds is most likely to be abnormal in this patient's cerebrospinal fluid?

A. 5-hydroxyindoleacetic acid

B. 14-3-3 protein

C. Homovanillic acid

D. Hypocretin-1

E. Melatonin

Submit

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- A. 5-hydroxyindoleacetic acid (5%)
- B. 14-3-3 protein (2%)
- C. Homovanillic acid (5%)
- ✓ D. Hypocretin-1 (70%)
- E. Melatonin (15%)

Omitted
Correct answer
D

70%
Answered correctly

01 sec
Time Spent

02/18/2020
Last Updated

Explanation

Narcolepsy	
	• Recurrent lapses into sleep or naps (≥3 times/week for 3 months) • ≥1 of the following:

Narcolepsy	

DSM-5 diagnostic criteria	• Recurrent lapses into sleep or naps (≥3 times/week for 3 months)
	• ≥1 of the following:
	  ◦ Cataplexy: Brief loss of muscle tone precipitated by strong emotion (eg, laughter, excitement)
	  ◦ Low cerebrospinal fluid levels of hypocretin-1
	  ◦ Shortened REM sleep latency

Associated features	• Hypnagogic or hypnopompic hallucinations • Sleep paralysis

This patient's excessive **daytime sleepiness**, episodic loss of motor tone triggered by emotion (**cataplexy**), and inability to move on awakening (**sleep paralysis**) are highly suggestive of **narcolepsy**. Narcolepsy with cataplexy is most often caused by the lack of 2 related neuropeptides: **hypocretin-1** (orexin-A) and **hypocretin-2** (orexin-B), which are produced in neurons located in the lateral hypothalamus. These neuropeptides promote wakefulness and inhibit REM sleep–related phenomena. Hypocretin-1 levels are low to absent in the cerebrospinal fluid (CSF) of patients who have narcolepsy with cataplexy.

(Choice A) Low CSF 5-hydroxyindoleacetic acid (a metabolite of serotonin) concentration has been associated with impulsive, destructive behaviors, particularly aggression, suicide, and violence.

(Choice B) Detection of elevated amounts of 14-3-3 protein in CSF is helpful in diagnosing Creutzfeldt-Jakob disease, a neurodegenerative disease caused by prions.

(Choice C) Altered levels of the primary dopamine metabolite, homovanillic acid, have been linked to many psychiatric conditions, including substance use disorders, psychosis, and mood disorders. CSF concentrations of homovanillic acid are also decreased in patients with Parkinson disease.

(Choice E) The level of melatonin in CSF has been shown to decrease with the progression of Alzheimer disease.

Educational objective:
Hypocretin-1 (orexin-A) and hypocretin-2 (orexin-B) are neuropeptides produced in the lateral hypothalamus that promote wakefulness and inhibit

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(Choice E) The level of melatonin in CSF has been shown to decrease with the progression of Alzheimer disease.

Educational objective:
Hypocretin-1 (orexin-A) and hypocretin-2 (orexin-B) are neuropeptides produced in the lateral hypothalamus that promote wakefulness and inhibit REM sleep–related phenomena. Most patients who have narcolepsy with cataplexy have undetectable levels of hypocretin-1 in their cerebrospinal fluid.

References

- Narcolepsy: a clinical review.
- Treatment options for narcolepsy.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Narcolepsy
Subject	System	Topic

A 5-year-old boy is brought to the office by his parents for a well-child visit. His mother says, "My son is doing very well. He is able to read at a first-grade level and knows his name and address. He loves to sing, dance, and play house with his older sisters. Everything seems fine with him; we just want to make sure his vaccinations are up to date before our family trip overseas." The physician administers the appropriate vaccinations. Just before leaving, the father says, "I think you should know that my son is playing with his sister's dolls and doesn't seem to like cars or trucks like most other boys. Is that normal?" Which of the following is the most appropriate response to the father's concerns?

A. "I hear your concern; let me reassure you that many boys play with dolls as a normal part of exploring the world."

B. "I understand your concern, but at his age it is best to allow him to play freely."

C. "I understand your concern; it may help to have him play with male friends and spend more time with you."

D. "It is helpful that you brought this up. Your son may have gender dysphoria and need additional support and assessment."

E. "There is no need to worry; children don't fully develop gender identity until adolescence."

Submit

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- ✓ A. "I hear your concern; let me reassure you that many boys play with dolls as a normal part of exploring the world." (62%)
- B. "I understand your concern, but at his age it is best to allow him to play freely." (21%)
- C. "I understand your concern; it may help to have him play with male friends and spend more time with you." (3%)
- D. "It is helpful that you brought this up. Your son may have gender dysphoria and need additional support and assessment." (4%)
- E. "There is no need to worry; children don't fully develop gender identity until adolescence." (7%)

Omitted
Correct answer
A

62%
Answered correctly

01 sec
Time Spent

02/23/2020
Last Updated

Explanation

Gender is the innate feeling someone has of being male, female, or a combination of both. Children develop an understanding of the concept of gender by age 3-4 and have a sense of the permanence of gender around age 5-6. It is **developmentally normal** for them to explore the world by **engaging in activities** that may be culturally associated with the **opposite gender**. It is important to follow a child's lead and allow this exploration to occur.

In contrast to occasional play and exploration, if there is a prolonged and intense feeling that a person's gender does not match one's assigned

Gender is the innate feeling someone has of being male, female, or a combination of both. Children develop an understanding of the concept of gender by age 3-4 and have a sense of the permanence of gender around age 5-6. It is **developmentally normal** for them to explore the world by **engaging in activities** that may be culturally associated with the **opposite gender**. It is important to follow a child's lead and allow this exploration to occur.

In contrast to occasional play and exploration, if there is a prolonged and intense feeling that a person's gender does not match one's assigned birth sex, it is more likely to continue into puberty. When this feeling is associated with **significant distress** it is diagnosed as **gender dysphoria**. Patients with this condition have increased rates of psychiatric illness, including depression and anxiety, and need monitoring and support.

(Choice B) Although it is important to allow the child to play freely, this response does not answer the father's question and is unlikely to decrease his concern. The father should be educated that his child's type of play is part of normal exploration.

(Choice C) It is normal for a child to explore gender activities. There is no evidence that boys need increased exposure to male figures to understand their own gender.

(Choice D) Playing with dolls is consistent with normal explorative play, not gender dysphoria. Further evaluation and professional support might be warranted in this child if he had a more persistent desire to be the opposite sex or disliked his own genitalia.

(Choice E) Children usually know their gender by age 4 and understand that it is permanent by age 5-6.

Educational objective:
Although children understand the concept of gender by age 4, it is normal for them to explore activities culturally associated with the opposite gender. In contrast, gender dysphoria is diagnosed when there is marked distress associated with a prolonged and intense feeling that one is a different gender from one's birth sex.

References

- Desisting and persisting gender dysphoria after childhood: a qualitative follow-up study.
- Gender variance and dysphoria in children and adolescents.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Normal child development
Subject	System	Topic

A 13-year-old girl is brought to the office for a routine visit. Although the patient is doing well in school and has friends, her mother is concerned about a change in her behavior over the past several months. They had previously enjoyed spending time together, but now the patient is frequently moody and spends most of her time on the computer in her locked bedroom. The mother also observes that her daughter gets upset for no reason and has used swear words on occasion. When the mother recently complimented her party outfit, the girl screamed, "I look hideous and I'm not going," and stormed out of the room. Later that day, she seemed fine and went to the party. On examination, the patient is pleasant and cooperative but makes little eye contact and asks if she can keep her tank top on during the examination. Which of the following is the most likely explanation for this girl's behavior?

- A. Body dysmorphic disorder
- B. Borderline personality disorder
- C. Cyclothymic disorder
- D. Disruptive mood dysregulation disorder
- E. Normal adolescent behavior
- F. Oppositional defiant disorder

Submit

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A. Body dysmorphic disorder (7%)
B. Borderline personality disorder (2%)
C. Cyclothymic disorder (1%)
D. Disruptive mood dysregulation disorder (6%)
✓ E. Normal adolescent behavior (80%)
F. Oppositional defiant disorder (2%)

Omitted
Correct answer
E

80%
Answered correctly

02 secs
Time Spent

02/22/2020
Last Updated

Explanation

This patient's intense **self-consciousness**, concerns about appearance and social acceptance, **moodiness**, increasing **need for privacy**, and transient **emotional outbursts** are characteristic of **normal adolescence**. Adolescence involves the developmental tasks of separating from the

Explanation

This patient's intense **self-consciousness**, concerns about appearance and social acceptance, **moodiness**, increasing **need for privacy**, and transient **emotional outbursts** are characteristic of **normal adolescence**. Adolescence involves the developmental tasks of separating from the family, developing a sense of identity, and adjusting to the hormonal and physical changes of puberty. This girl's reluctance to remove her tank top for the physical examination is likely related to her self-consciousness regarding pubertal development.

Although differentiating normal adolescent behavior from early signs of psychiatric disorders can be difficult, this patient's engagement with school and friends is reassuring. In contrast, adolescents exhibiting persistent anger, sadness, impulsivity, sleep or appetite disturbance, declining academic performance, and social isolation from peers warrant further evaluation.

(Choice A) Patients with body dysmorphic disorder are excessively preoccupied with perceived defects in their physical appearance and engage in time-consuming, repetitive behaviors (eg, mirror checking, excessive grooming) that cause significant impairment in functioning. This patient's appearance concerns and self-consciousness about her changing body are typical of early adolescence.

(Choice B) Although this girl exhibits mood lability that can be seen in borderline personality disorder, she lacks the pervasive pattern of instability in interpersonal relationships and self-image, marked impulsivity, and self-injury that characterize the disorder. Personality disorders are not diagnosed in adolescence, as the personality is still forming.

(Choice C) Cyclothymic disorder is a chronic, fluctuating mood disturbance involving numerous periods of hypomanic and depressive symptoms that are insufficient to meet the criteria for hypomanic or major depressive episodes. Symptoms must be present for at least a year in children and adolescents and cause significant distress and impairment; this is not the case in this patient.

(Choice D) Disruptive mood dysregulation disorder, a new diagnosis in DSM-5, is characterized by persistent irritability and frequent, developmentally inappropriate temper outbursts. This patient's transient emotional outburst related to insecurity about social acceptance is consistent with normal adolescent development.

(Choice F) This patient does not exhibit the argumentative, defiant, and vindictive behavior required for the diagnosis of oppositional defiant disorder.

Educational objective:
Adolescence often involves some degree of moodiness, intense self-consciousness, and transient emotional outbursts. Assessment of severity,

in time-consuming, repetitive behaviors (eg, mirror checking, excessive grooming) that cause significant impairment in functioning. This patient's appearance concerns and self-consciousness about her changing body are typical of early adolescence.

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Educational objective:
Adolescence often involves some degree of moodiness, intense self-consciousness, and transient emotional outbursts. Assessment of severity, persistence, and degree of social and academic impairment can help differentiate normal adolescent behavior from behavioral changes requiring further evaluation.

References

- Adolescent psychosocial, social, and cognitive development.
- Ongoing development of social cognition in adolescence.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Child and adolescent mental health
Subject	System	Topic

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A 28-year-old man comes to the office due to persistent fatigue. For the past several weeks, he has been having trouble sleeping and is frequently late for work as he has difficulty getting out of bed. At work, his mind wanders, and his supervisor has commented that the quality of his work has deteriorated. The patient says, "I've been feeling down and don't feel like doing anything. My appetite is poor. I no longer go out with my friends and haven't gone to the gym in weeks." The patient has no significant medical or psychiatric history. He has 1 or 2 alcoholic drinks several days a week but does not use illicit drugs. Routine laboratory evaluation, including thyroid function tests and serum B_{12} level, is normal. Physical examination is unremarkable. Mental status examination shows a cooperative man with sad affect. No delusions are elicited. The patient says he sometimes wishes he could "go to sleep and not wake up," but has no suicidal intent or plan. First-line pharmacotherapy for this patient most likely involves a drug with which of the following mechanisms of action?

A. Antagonism of dopamine D2 receptors
B. Antagonism of serotonin 5-HT2 receptors
C. Inhibition of sodium channels
D. Inhibition of the serotonin transporter
E. Inhibition of monoamine oxidase
F. Potentiation of the effects of endogenous GABA

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- A. Antagonism of dopamine D2 receptors (2%)
- B. Antagonism of serotonin 5-HT2 receptors (18%)
- C. Inhibition of sodium channels (0%)
- ✓ D. Inhibition of the serotonin transporter (69%)
- E. Inhibition of monoamine oxidase (7%)
- F. Potentiation of the effects of endogenous GABA (2%)

Omitted
Correct answer
D

69%
Answered correctly

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01/11/2020
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Explanation

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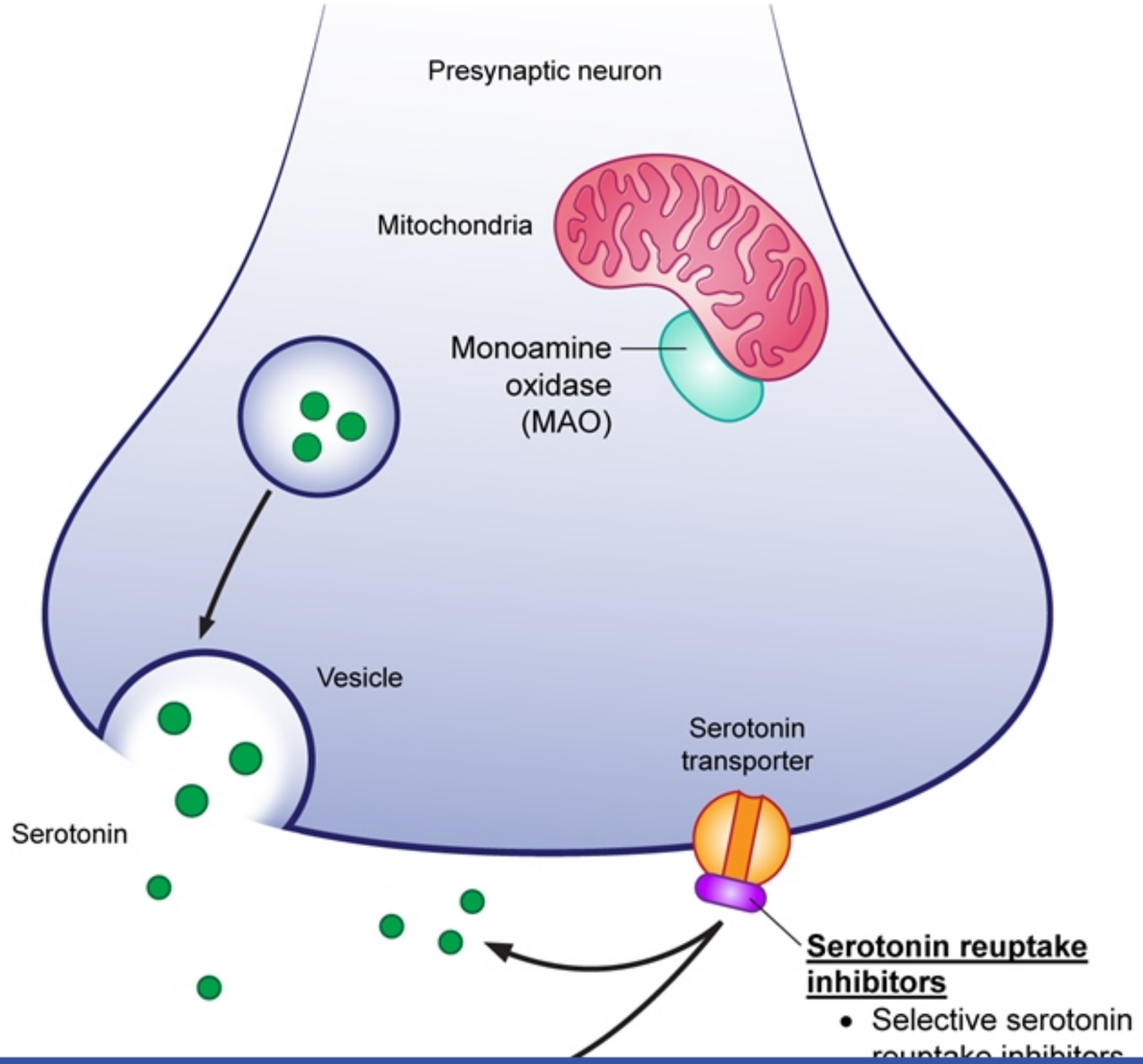
Serotonin reuptake inhibitors



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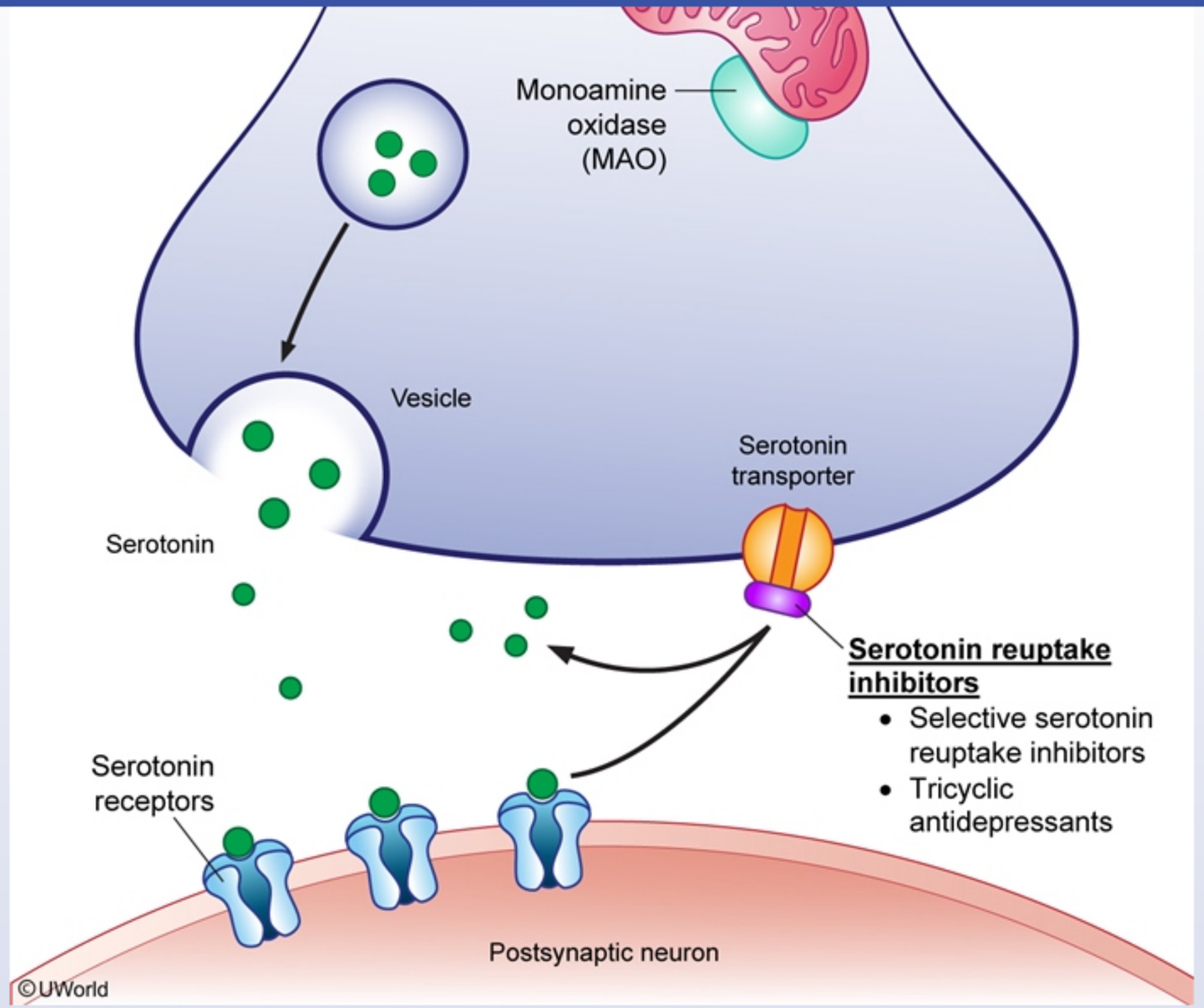

This patient's several-week history of depressed mood, loss of interest, fatigue, impaired sleep, poor concentration and appetite, and thoughts of death is consistent with major depressive disorder. The major neurotransmitters involved in the pathophysiology of depression are thought to be

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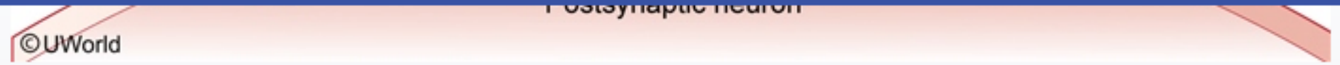

This patient's several-week history of depressed mood, loss of interest, fatigue, impaired sleep, poor concentration and appetite, and thoughts of death is consistent with major depressive disorder. The major neurotransmitters involved in the pathophysiology of depression are thought to be serotonin and norepinephrine (and dopamine to a lesser extent). Most available antidepressant medications affect serotonin or both serotonin and norepinephrine at the synapse.

Selective serotonin reuptake inhibitors are considered **first-line antidepressants** that work by **inhibiting** the **serotonin transporter** (SERT) protein, which is normally responsible for transporting serotonin out of the synaptic cleft back into the presynaptic neuron. The inhibition of SERT prevents the normal reuptake of serotonin, resulting in increased availability of serotonin in the synaptic cleft.

(Choices A and B) These receptor activities are the primary mechanisms of action of antipsychotics used mainly to treat schizophrenia and other psychotic disorders and to augment antidepressants in the treatment of mood disorders. Potent antagonism of dopamine 2 receptors is the mechanism of action of first-generation antipsychotics such as haloperidol. Second-generation antipsychotics have comparatively less affinity for D2 receptors and the additional property of serotonin 5-HT2 receptor antagonism, which underlies their lower risk of extrapyramidal side effects. An antipsychotic would not be appropriate monotherapy for major depression without psychotic features.

(Choice C) Inhibition of sodium channels, resulting in stabilization of neuronal membranes, is the mechanism of action of some antiepileptic drugs (eg, carbamazepine). These drugs also have a role as mood stabilizers in bipolar disorder but are not a primary treatment for unipolar major depression.

(Choice E) Inhibition of monoamine oxidase is the mechanism of action of monoamine oxidase inhibitors used in treatment-resistant depression. These drugs are not used as first-line therapy due to their dietary restrictions and risk of serious adverse events (eg, hypertensive crisis, serotonin syndrome).

(Choice F) Benzodiazepines work to potentiate the effects of GABA, the major inhibitory neurotransmitter in the central nervous system, by facilitating the increased frequency of chloride channel opening in the GABA A receptor. They have sedative, hypnotic, anxiolytic, anticonvulsant, and muscle relaxant properties but are not a first-line treatment for depression.

Educational objective:
Most available antidepressants target the neurotransmission of serotonin or norepinephrine, or both. Inhibition of serotonin reuptake by blocking the serotonin transporter is the primary mechanism of action of selective serotonin reuptake inhibitors.

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Educational objective:
Most available antidepressants target the neurotransmission of serotonin or norepinephrine, or both. Inhibition of serotonin reuptake by blocking the serotonin transporter is the primary mechanism of action of selective serotonin reuptake inhibitors.

Exhibit Display

Major depressive disorder	
Diagnosis	• ≥5 of the following symptoms lasting ≥2 weeks (at least 1 symptom must be either depressed mood or loss of interest/pleasure): ◦ Depressed mood ◦ Loss of interest or pleasure ◦ Change in appetite or weight ◦ Insomnia or hypersomnia ◦ Psychomotor retardation or agitation ◦ Low energy ◦ Poor concentration or indecisiveness ◦ Thoughts of worthlessness or inappropriate guilt ◦ Recurrent thoughts of death or suicide • No history of mania or hypomania • Not due to substances or another medical condition
Treatment	• Psychotherapy • Antidepressant medication

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Educational objective:
Most available antidepressants target the neurotransmission of serotonin or norepinephrine, or both. Inhibition of serotonin reuptake by blocking the serotonin transporter is the primary mechanism of action of selective serotonin reuptake inhibitors.

References

- Neurobiology of depression and mechanism of action of depression treatments.
- Regional differences in SERT occupancy after acute and prolonged SSRI intake investigated by brain PET.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Depression
Subject	System	Topic

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An 11-year-old girl is brought to the office due to disruptive behavior at home and at school. Her parents report that she gets in trouble for talking during class and not following instructions. Although the patient is of above-average intelligence, her grades are poor. Teachers note that she makes careless mistakes while rushing through tests and frequently forgets to hand in assignments. At home, she is easily distracted while trying to focus on her homework. The patient has frequent conflicts with her mother, who says, "Getting her ready for school in the morning is impossible. We're frequently late because she always misplaces her cell phone and books." The patient has no other medical history, and developmental milestones are within normal range. Physical examination shows no abnormalities. The girl and her parents are willing to consider medication if it will help. A drug with which of the following mechanisms of action is most appropriate for this patient?

A. Antagonism of alpha-2 adrenergic receptors

B. Antagonism of dopamine D2 receptors

C. Increased availability of norepinephrine and dopamine

D. Increased availability of serotonin

E. Increased availability of serotonin and norepinephrine

F. Positive allosteric modulation of GABA

Submit

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- A. Antagonism of alpha-2 adrenergic receptors (7%)
- B. Antagonism of dopamine D2 receptors (4%)
- ✓ C. Increased availability of norepinephrine and dopamine (63%)
- D. Increased availability of serotonin (4%)
- E. Increased availability of serotonin and norepinephrine (14%)
- F. Positive allosteric modulation of GABA (5%)

Omitted
Correct answer
C

63%
Answered correctly

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Last Updated

Explanation

This patient's inattention, distractibility, disorganization, and forgetfulness are characteristic of attention-deficit hyperactivity disorder (ADHD). Norepinephrine and dopamine are the key neurotransmitters involved in the pathophysiology of ADHD symptoms. Symptoms of hyperactivity,

Explanation

This patient's inattention, distractibility, disorganization, and forgetfulness are characteristic of attention-deficit hyperactivity disorder (ADHD). Norepinephrine and dopamine are the key neurotransmitters involved in the pathophysiology of ADHD symptoms. Symptoms of hyperactivity, impulsivity, and inattention have been linked to reduced levels of norepinephrine and dopamine in the prefrontal cortex.

Stimulant drugs, including methylphenidate and amphetamines, are **first-line** drug treatments for school-age children with ADHD. They work by **blocking norepinephrine** and **dopamine reuptake** at synapses in the prefrontal cortex. In addition, amphetamines increase the release of norepinephrine and dopamine from presynaptic storage vesicles and inhibit monoamine oxidase.

(Choice A) Alpha-2 adrenergic agonists (not antagonists) are used in the treatment of ADHD but do not have the same evidence for efficacy as stimulants. Examples include clonidine and guanfacine.

(Choice B) Antagonism of dopamine D2 receptors is the mechanism of action of antipsychotic medications. These drugs do not specifically treat ADHD.

(Choices D and E) Selective serotonin reuptake inhibitor antidepressants increase availability of serotonin by blocking serotonin reuptake from the synapse. Serotonin-norepinephrine reuptake inhibitors block the reuptake of both serotonin and norepinephrine. These agents are commonly used to treat depressive and anxiety disorders, not ADHD.

(Choice F) Benzodiazepines work as positive allosteric modulators of GABA, facilitating the increased frequency of chloride-channel opening in the GABA receptor. Benzodiazepines have sedative, hypnotic, anxiolytic, anticonvulsant, and muscle-relaxant properties.

Educational objective:
Stimulant medications are a first-line treatment for attention-deficit hyperactivity disorder. They work by increasing the availability of norepinephrine and dopamine in the prefrontal cortex.

References

- The roles of dopamine and noradrenaline in the pathophysiology and treatment of attention-deficit/hyperactivity disorder.
- The pharmacology of amphetamine and methylphenidate: relevance to the neurobiology of attention-deficit/hyperactivity disorder and other psychiatric comorbidities.

Explanation

This patient's inattention, d
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Educational objective:
Stimulant medications are
norepinephrine and dopar

References

- The roles of dopamine
- The pharmacology of
psychiatric comorbidities.

Exhibit Display

Attention-deficit hyperactivity disorder	
Clinical features	• Inattentive &/or hyperactive/impulsive symptoms for ≥6 months ◦ **Inattentive symptoms:** Difficulty focusing, distractible, does not listen or follow instructions, disorganized, forgetful, loses/misplaces objects ◦ **Hyperactive/impulsive symptoms:** Fidgety, unable to sit still, "driven by a motor," hyper-talkative, interrupts, blurts out answers • Several symptoms present **before age 12** • Symptoms occur in at least two settings (home, school) & cause functional impairment • Subtypes: Predominantly inattentive, predominantly hyperactive/impulsive, combined type

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A 38-year-old man comes to the office for evaluation of discomfort in his wrists. He thinks his symptoms may be related to "typing all day, every day." The patient is a software engineer and prefers to work remotely from home to "avoid wasting time talking and interacting with coworkers." He rarely leaves his apartment and spends his spare time on his computer, reading online forums about space exploration and the possibility of alien life. When asked about relationships he says, "I've always liked being on my own." He spent a large portion of his childhood disassembling and rebuilding electronic devices and had few friends. His affect appears constricted and his responses to questions are limited. Which of the following is the most likely personality disorder in this patient?

A. Antisocial
B. Avoidant
C. Obsessive-compulsive
D. Paranoid
E. Schizoid
F. Schizotypal

Submit

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- A. Antisocial (7%)
- B. Avoidant (13%)
- C. Obsessive-compulsive (0%)
- D. Paranoid (0%)
- ✓ E. Schizoid (67%)
- F. Schizotypal (10%)

Omitted
Correct answer
E

67%
Answered correctly

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Last Updated

Explanation

DSM-5 personality disorders	
	• **Paranoid:** suspicious, distrustful, hypervigilant

DSM-5 personality disorders	
Cluster A Odd/eccentric	• **Paranoid:** suspicious, distrustful, hypervigilant • **Schizoid:** prefers to be a loner, detached, unemotional • **Schizotypal:** unusual thoughts, perceptions & behavior
Cluster B Dramatic/erratic	• **Antisocial:** disregard & violation of the rights of others • **Borderline:** chaotic relationships, abandonment fears, labile mood, impulsivity, inner emptiness, self-harm • **Histrionic:** superficial, theatrical, attention-seeking • **Narcissistic:** grandiosity, lack of empathy
Cluster C Anxious/fearful	• **Avoidant:** avoidance due to fears of criticism & rejection • **Dependent:** submissive, clingy, needs to be taken care of • **Obsessive-compulsive:** rigid, controlling, perfectionistic

This patient's preference for working on his own, disinterest in relationships, and constricted range of affect are suggestive of **schizoid personality disorder**. Individuals with this disorder have a persistent pattern of **social detachment**, preference for **solitary activities**, and **limited emotional expressivity** when interacting with others. They have few close relationships, usually only with family members, and show little interest in intimacy or sexual experiences. Individuals with schizoid personality disorder may have occupational difficulties as they can appear indifferent to feedback and tend to prefer working alone.

(Choice A) Antisocial personality disorder involves a pattern of violating the rights of others and engaging in unlawful behaviors (eg, physical aggression, property destruction) without feeling remorseful for transgressions.

(Choice B) Individuals with avoidant personality disorder also have limited social interactions, but they strongly desire relationships and social acceptance. They tend to avoid socialization due to fear of rejection and feelings of inadequacy.

(Choice C) Obsessive-compulsive personality disorder involves a pattern of fixation with orderliness, control, and perfectionism resulting in interpersonal inflexibility and moral rigidity.

(Choice D) Individuals with paranoid personality disorder also have few relationships and avoid social interactions, but this stems from

limited emotional expressivity when interacting with others. They have few close relationships, usually only with family members, and show little interest in intimacy or sexual experiences. Individuals with schizoid personality disorder may have occupational difficulties as they can appear indifferent to feedback and tend to prefer working alone.

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(Choice C) Obsessive-compulsive personality disorder involves a pattern of fixation with orderliness, control, and perfectionism resulting in interpersonal inflexibility and moral rigidity.

(Choice D) Individuals with paranoid personality disorder also have few relationships and avoid social interactions, but this stems from suspiciousness and distrust of others' intentions rather than disinterest.

(Choice F) Although individuals with schizoid personality disorder and schizotypal personality disorder lack close friends and can be socially awkward, those with schizotypal personality disorder have a long-standing pattern of eccentric behaviors, perceptual disturbances, and magical thinking (eg, clairvoyance, telepathy).

Educational objective:
Schizoid personality disorder consists of a persistent pattern of social detachment, preference for solitary activities, and constricted range of affect in social interactions.

References

- Review of pharmacologic treatment in cluster A personality disorders.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Personality disorders
Subject	System	Topic

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A 45-year-old man is hospitalized due to suicidal ideation. Over the past month, the patient has become increasingly depressed, withdrawn, and physically restless. He has had increasing difficulty concentrating at his job as a computer programmer. The patient's appetite has been poor, and he has had difficulty falling and staying asleep. He stopped going to work last week and refused to leave the house until his hospitalization. The patient has no medical or psychiatric history. Physical examination is unremarkable apart from a 4.5-kg (10-lb) weight loss. On mental status examination, the patient appears depressed and anxious. He reports that he is responsible for "all the evil in the world" and has heard a voice for the past week telling him that he does not deserve to live. Which of the following is the most likely diagnosis in this patient?

A. Bipolar disorder with psychotic features
B. Delusional disorder
C. Major depressive disorder with psychotic features
D. Schizoaffective disorder
E. Schizophrenia
F. Schizophreniform disorder

Submit

A 45-year-old man is hospitalized due to suicidal ideation. Over the past month, the patient has become increasingly depressed, withdrawn, and physically restless. He has had increasing difficulty concentrating at his job as a computer programmer. The patient's appetite has been poor, and he has had difficulty falling and staying asleep. He stopped going to work last week and refused to leave the house until his hospitalization. The patient has no medical or psychiatric history. Physical examination is unremarkable apart from a 4.5-kg (10-lb) weight loss. On mental status examination, the patient appears depressed and anxious. He reports that he is responsible for "all the evil in the world" and has heard a voice for the past week telling him that he does not deserve to live. Which of the following is the most likely diagnosis in this patient?

- A. Bipolar disorder with psychotic features (2%)
- B. Delusional disorder (1%)
- ✓ C. Major depressive disorder with psychotic features (70%)
- D. Schizoaffective disorder (11%)
- E. Schizophrenia (2%)
- F. Schizophreniform disorder (11%)

Omitted
Correct answer
C

70%
Answered correctly

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Explanation

This patient's presentation is consistent with **major depressive disorder (MDD) with psychotic features**. This disorder is a severe subtype of MDD in which the patient develops **psychotic symptoms exclusively during** a **depressive episode**. This patient's ≥2 weeks of depressed mood, impaired concentration, decreased appetite/weight loss, sleep disturbance, and suicidal ideation meet criteria for MDD, and his psychotic

This patient's presentation is consistent with **major depressive disorder (MDD) with psychotic features**. This disorder is a severe subtype of MDD in which the patient develops **psychotic symptoms exclusively during** a **depressive episode**. This patient's ≥2 weeks of depressed mood, impaired concentration, decreased appetite/weight loss, sleep disturbance, and suicidal ideation meet criteria for MDD, and his psychotic symptoms (eg, delusions of causing evil, auditory hallucinations) specify the psychotic features subtype. Delusions and hallucinations are commonly mood congruent and have depressive themes (eg, deserved punishment, worthlessness, nihilism), although mood-incongruent psychotic symptoms (unrelated to depressive themes) can also occur.

Differentiating MDD with psychotic features from MDD without psychotic features is important as treatment differs. Patients with MDD with psychotic features require combined treatment with an **antidepressant and antipsychotic** or electroconvulsive therapy.

(Choice A) This patient has no history of mania or hypomania, thereby ruling out bipolar disorder.

(Choice B) In delusional disorder, patients experience delusions but no other psychotic symptoms for at least a month. Mood symptoms, if present, are brief and not a prominent part of the illness.

(Choice D) Patients with schizoaffective disorder also experience both mood and psychotic symptoms. Schizoaffective disorder is differentiated from MDD with psychotic features by the presence of delusions and/or hallucinations for ≥2 weeks in the absence of MDD mood symptomatology. There is no evidence that this patient has experienced psychotic symptoms outside of his MDD episode.

(Choices E and F) Patients with schizophreniform disorder and schizophrenia experience psychotic symptoms in the absence of an identifiable mood disorder. In schizophreniform disorder, symptoms last ≥1 month but <6 months; in schizophrenia, symptoms persist for ≥6 months.

Educational objective:
Major depressive disorder (MDD) with psychotic features is a severe subtype of unipolar major depression characterized by symptoms meeting the criteria for MDD and the presence of delusions and/or hallucinations.

References

- Challenges in the treatment of major depressive disorder with psychotic features.
- Prevalence and clinical characteristics of psychotic versus nonpsychotic major depression in a general psychiatric outpatient clinic.

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A 52-year-old woman comes to the office for a checkup. Her medical problems include hypertension and hypercholesterolemia. The patient has a long-standing relationship with her primary care physician, who has treated her children as well. During the examination, she confides that she has been "down" since her youngest child left for college 2 months ago. The patient is worried about her daughter being away from home for the first time and whether she will be successful at school. At work, the patient occasionally has lapses of concentration when worrying about whether her daughter is okay, but it has not affected her productivity. She says, "I still enjoy going out with my husband but all we do is talk about our kids." The patient has occasional insomnia and tension headaches but notes that these are nothing new. Physical examination is normal. Which of the following is the most likely explanation for this patient's condition?

A. Adjustment disorder with depressed mood

B. Generalized anxiety disorder

C. Major depressive disorder

D. Normal sadness

E. Persistent depressive disorder

Submit

A 52-year-old woman comes to the office for a checkup. Her medical problems include hypertension and hypercholesterolemia. The patient has a long-standing relationship with her primary care physician, who has treated her children as well. During the examination, she confides that she has been "down" since her youngest child left for college 2 months ago. The patient is worried about her daughter being away from home for the first time and whether she will be successful at school. At work, the patient occasionally has lapses of concentration when worrying about whether her daughter is okay, but it has not affected her productivity. She says, "I still enjoy going out with my husband but all we do is talk about our kids." The patient has occasional insomnia and tension headaches but notes that these are nothing new. Physical examination is normal. Which of the following is the most likely explanation for this patient's condition?

- A. Adjustment disorder with depressed mood (27%)
- B. Generalized anxiety disorder (4%)
- C. Major depressive disorder (0%)
- ✓ D. Normal sadness (66%)
- E. Persistent depressive disorder (0%)

Omitted
Correct answer
D

66%
Answered correctly

02 secs
Time Spent

03/06/2020
Last Updated

Explanation

Differential diagnosis of depressed mood	
	• ≥2 weeks

Differential diagnosis of depressed mood	
Major depressive disorder	• ≥2 weeks • **≥5 of 9** symptoms: depressed mood & SIGECAPS • Significant functional impairment • No lifetime history of mania
Persistent depressive disorder (dysthymia)	• Chronic depressed mood ≥2 years • ≥2 of the following: appetite disturbance, sleep disturbance, low energy, low self-esteem, poor concentration, hopelessness
Adjustment disorder with depressed mood	• Onset within 3 months of identifiable stressor • Marked distress &/or functional impairment • Does not meet criteria for another DSM-5 disorder
Normal stress response	• Not excessive or out of proportion to severity of stressor • No significant functional impairment

SIGECAPS = Sleep disturbance, loss of Interest, excessive Guilt, low Energy, impaired Concentration, Appetite disturbance, Psychomotor agitation/retardation, and Suicidal ideation.

Periods of sadness are a normal part of human experience and should not be diagnosed as a psychiatric disorder unless criteria are met for severity, duration, and clinically significant distress or impairment. This patient's mild depression in response to life changes is consistent with **normal sadness**. She does not meet the full criteria for any disorder. In addition, her insomnia and headaches are no different from her baseline. Significantly, her **social and occupational functioning** is **not impaired**, which is a DSM-5 requirement for the diagnosis of most psychiatric disorders, including adjustment disorders.

(Choice A) Adjustment disorder involves the development of anxiety and/or depression symptoms within 3 months of the onset of the stressor with associated marked distress (exceeding what would normally be expected) and/or significant functional impairment.

(Choice B) The duration and severity of this patient's worry about her daughter are not sufficient for a diagnosis of generalized anxiety disorder.

agitation/retardation, and Suicidal ideation.

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(Choice A) Adjustment disorder involves the development of anxiety and/or depression symptoms within 3 months of the onset of the stressor with associated marked distress (exceeding what would normally be expected) and/or significant functional impairment.

(Choice B) The duration and severity of this patient's worry about her daughter are not sufficient for a diagnosis of generalized anxiety disorder. This disorder requires ≥6 months of excessive worry and anxiety about multiple issues.

(Choices C and E) A diagnosis of major depressive disorder requires a 2-week period of ≥5 of 9 symptoms; depressed mood, decreased interest/pleasure, appetite disturbance, sleep disturbance, psychomotor agitation/retardation, loss of energy, excessive guilt, impaired concentration, and suicidal ideation. In persistent depressive disorder, depressive symptoms last ≥2 years.

Educational objective:
Evaluation of depressive symptoms occurring in response to psychosocial stressors must take into account the severity, duration, and degree of functional impairment. Mild or brief sadness without significant interference in psychosocial functioning is consistent with normal sadness.

References

- Uncomplicated depression is normal sadness, not depressive disorder: further evidence from the NESARC.
- Depression and the medicalization of sadness: conceptualization and recommended help-seeking.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Adjustment disorders
Subject	System	Topic

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agitation/retardation, and Suicidal ideation.

Periods of sadness are a normal part of human experience and should not be diagnosed as a psychiatric disorder unless criteria are met for severity, duration, and clinically significant distress or impairment. This patient's mild depression in response to life changes is consistent with **normal sadness**. She does not meet the full criteria for any disorder. In addition, her insomnia and headaches are no different from her baseline. Significantly, her **social and occupational functioning** is **not impaired**, which is a DSM-5 requirement for the diagnosis of most psychiatric disorders, including adjustment disorders.

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Behavioral science	Psychiatric/Behavioral & Substance Abuse	Adjustment disorders
Subject	System	Topic

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A 5-year-old girl is brought to the office by her mother, who is concerned after observing her daughter speak to an empty chair in her room on several occasions. The girl's medical history is significant for preterm birth at 36 weeks gestation but is otherwise noncontributory. Her family history is significant for cerebrovascular accident and depression in her maternal grandfather and schizoaffective disorder in her father. When questioned, the patient says she sees her grandmother at night and likes to speak to her before she goes to bed. The grandmother died 2 months ago and had lived in the family home. For a few weeks following the death, the girl would become tearful and frequently ask her parents when her grandmother would be coming back. Which of the following is the most likely diagnosis in this patient?

A. Acute stress disorder
B. Brief psychotic disorder
C. Major depression with psychotic features
D. Normal behavior
E. Post-traumatic stress disorder
F. Schizophreniform disorder

Submit

A 5-year-old girl is brought to the office by her mother, who is concerned after observing her daughter speak to an empty chair in her room on several occasions. The girl's medical history is significant for preterm birth at 36 weeks gestation but is otherwise noncontributory. Her family history is significant for cerebrovascular accident and depression in her maternal grandfather and schizoaffective disorder in her father. When questioned, the patient says she sees her grandmother at night and likes to speak to her before she goes to bed. The grandmother died 2 months ago and had lived in the family home. For a few weeks following the death, the girl would become tearful and frequently ask her parents when her grandmother would be coming back. Which of the following is the most likely diagnosis in this patient?

- A. Acute stress disorder (5%)
- B. Brief psychotic disorder (3%)
- C. Major depression with psychotic features (1%)
- ✓ D. Normal behavior (79%)
- E. Post-traumatic stress disorder (5%)
- F. Schizophreniform disorder (4%)

Omitted
Correct answer
D

79%
Answered correctly

03 secs
Time Spent

06/22/2020
Last Updated

Explanation

This child is experiencing **hallucinations** of her recently deceased grandmother that appear to be comforting. Studies suggest that behavioral disturbances are common in **children** the year following the death of a loved one and that children try to maintain a connection with the lost loved one as a way of coping with loss. In the absence of other psychiatric symptoms (eg, other psychotic symptoms, severe mood symptoms, social or

This child is experiencing **hallucinations** of her recently deceased grandmother that appear to be comforting. Studies suggest that behavioral disturbances are common in **children** the year following the death of a loved one and that children try to maintain a connection with the lost loved one as a way of coping with loss. In the absence of other psychiatric symptoms (eg, other psychotic symptoms, severe mood symptoms, social or academic problems), these hallucinations are unlikely to be a symptom of mental illness and are likely a way of holding on to the grandmother during the **bereavement** process. The mother should be reassured that this is a **normal** response to loss.

Children under age 6 do not understand the finality of death and may believe that it is temporary or reversible. By the age of 7, children usually understand that death is permanent but may have difficulty understanding abstract concepts (eg, soul, heaven) until adolescence.

Parents can help young children mourn by supporting their expression about the deceased, maintaining routine, reassuring them that the death and other people's reactions are not their fault, and responding truthfully to their children's questions in a concrete fashion.

(Choices A and E) Hallucinations should be differentiated from nightmares and flashbacks that may occur in acute stress disorder and post-traumatic stress disorder (PTSD). These disorders typically involve exposure to actual or threatened death, serious injury, or sexual violence followed by development of characteristic symptoms (eg, intrusive flashbacks, nightmares, avoidance, detachment, hyperarousal). Acute stress disorder lasts from 3 days to 1 month, and PTSD lasts more than 1 month.

(Choices B and F) Childhood-onset psychotic disorders are rare, and this child exhibits no other psychotic symptoms (eg, delusions, disorganization, negative symptoms). Psychotic disorders can be differentiated by duration; brief psychotic disorder lasts for less than 1 month, schizophreniform disorder lasts 1-6 months, and schizophrenia lasts 6 months or more.

(Choice C) This patient exhibits no persistent depressive symptoms that would be required to diagnose major depressive disorder with psychotic features.

Educational objective:
Transient behavioral disturbances are common in children after the death of a loved one. Hallucinations of recently deceased relatives are part of a normal grief reaction and may not be indicative of major psychiatric illness.

References

- Hallucinations in children and adolescents.
- Grief and loss of a caregiver in children: a developmental perspective.

Children under age 6 do not understand the finality of death and may believe that it is temporary or reversible. By the age of 7, children usually understand that death is permanent but may have difficulty understanding abstract concepts (eg, soul, heaven) until adolescence.

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Transient behavioral disturbances are common in children after the death of a loved one. Hallucinations of recently deceased relatives are part of a normal grief reaction and may not be indicative of major psychiatric illness.

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Behavioral science	Psychiatric/Behavioral & Substance Abuse	Grief
Subject	System	Topic

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A 62-year-old woman comes to the office for follow-up of worsening hypertension. The patient admits to not taking her antihypertension medication as prescribed. She says she feels fine and adds, "I always listen to my bodily rhythms when deciding whether to take medication on a particular day." The patient explains that her crystal jewelry has healing powers, and she maintains an online forum about the health benefits of crystals. The patient does not trust most people and believes that she can predict the weather based on the number of birds in her yard. She lives alone, has few friends, and is unemployed. On examination, the patient makes limited eye contact and appears mildly anxious. She has no auditory hallucinations, and no specific delusions are elicited. Which of the following is the most likely explanation for this clinical presentation?

A. Avoidant personality disorder
B. Borderline personality disorder
C. Obsessive-compulsive personality disorder
D. Paranoid personality disorder
E. Schizoid personality disorder
F. Schizophrenia
G. Schizotypal personality disorder

Submit

A 62-year-old woman comes to the office for follow-up of worsening hypertension. The patient admits to not taking her antihypertension medication as prescribed. She says she feels fine and adds, "I always listen to my bodily rhythms when deciding whether to take medication on a particular day." The patient explains that her crystal jewelry has healing powers, and she maintains an online forum about the health benefits of crystals. The patient does not trust most people and believes that she can predict the weather based on the number of birds in her yard. She lives alone, has few friends, and is unemployed. On examination, the patient makes limited eye contact and appears mildly anxious. She has no auditory hallucinations, and no specific delusions are elicited. Which of the following is the most likely explanation for this clinical presentation?

- A. Avoidant personality disorder (3%)
- B. Borderline personality disorder (2%)
- C. Obsessive-compulsive personality disorder (0%)
- D. Paranoid personality disorder (5%)
- E. Schizoid personality disorder (15%)
- F. Schizophrenia (0%)
- ✓ G. Schizotypal personality disorder (71%)

Omitted
Correct answer
G

71%
Answered correctly

03 secs
Time Spent

03/20/2020
Last Updated

Explanation

DSM-5 personality disorders

DSM-5 personality disorders	
Cluster A Odd/eccentric	• **Paranoid:** suspicious, distrustful, hypervigilant • **Schizoid:** prefers to be a loner, detached, unemotional • **Schizotypal:** unusual thoughts, perceptions & behavior
Cluster B Dramatic/erratic	• **Antisocial:** disregard & violation of the rights of others • **Borderline:** chaotic relationships, abandonment fears, labile mood, impulsivity, inner emptiness, self-harm • **Histrionic:** superficial, theatrical, attention-seeking • **Narcissistic:** grandiosity, lack of empathy
Cluster C Anxious/fearful	• **Avoidant:** avoidance due to fears of criticism & rejection • **Dependent:** submissive, clingy, needs to be taken care of • **Obsessive-compulsive:** rigid, controlling, perfectionistic

This patient's eccentric behavior, odd thoughts, perceptual distortions (eg, "bodily rhythms"), and social anxiety are consistent with **schizotypal personality disorder**. Patients with this disorder typically exhibit **magical thinking** (eg, superstitiousness, clairvoyance) and odd **perceptual disturbances** that are subthreshold for a psychotic disorder. They do not experience the persistent, fixed delusions or frank hallucinations seen in schizophrenia **(Choice F)**. Individuals with schizotypal personality disorder rarely sustain close interpersonal relationships due to excessive social anxiety that does not decrease with familiarity.

(Choice A) Social anxiety is common in patients with both schizotypal and avoidant personality disorders. However, individuals with avoidant personality disorder desire relationships but fear rejection and do not exhibit the eccentric behaviors of schizotypal personality disorder.

(Choice B) Borderline personality disorder is characterized by unstable relationships, impulsivity, mood lability, and self-harm.

(Choice C) Obsessive-compulsive personality disorder is a lifelong pattern of preoccupation with orderliness, perfectionism, and control.

(Choices D and E) Although individuals with paranoid and schizoid personality disorders also have difficulty sustaining trusting relationships, they do not exhibit the overt eccentricity or perceptual distortions seen in schizotypal personality disorder. Patients with paranoid personality disorder exhibit a pattern of pervasive distrust and suspicion; those with schizoid personality disorder are socially detached and tend to prefer solitary

Anxious/fearful	• **Obsessive-compulsive:** rigid, controlling, perfectionistic

This patient's eccentric behavior, odd thoughts, perceptual distortions (eg, "bodily rhythms"), and social anxiety are consistent with **schizotypal personality disorder**. Patients with this disorder typically exhibit **magical thinking** (eg, superstitiousness, clairvoyance) and odd **perceptual disturbances** that are subthreshold for a psychotic disorder. They do not experience the persistent, fixed delusions or frank hallucinations seen in schizophrenia **(Choice F)**. Individuals with schizotypal personality disorder rarely sustain close interpersonal relationships due to excessive social anxiety that does not decrease with familiarity.

(Choice A) Social anxiety is common in patients with both schizotypal and avoidant personality disorders. However, individuals with avoidant personality disorder desire relationships but fear rejection and do not exhibit the eccentric behaviors of schizotypal personality disorder.

(Choice B) Borderline personality disorder is characterized by unstable relationships, impulsivity, mood lability, and self-harm.

(Choice C) Obsessive-compulsive personality disorder is a lifelong pattern of preoccupation with orderliness, perfectionism, and control.

(Choices D and E) Although individuals with paranoid and schizoid personality disorders also have difficulty sustaining trusting relationships, they do not exhibit the overt eccentricity or perceptual distortions seen in schizotypal personality disorder. Patients with paranoid personality disorder exhibit a pattern of pervasive distrust and suspicion; those with schizoid personality disorder are socially detached and tend to prefer solitary activities.

Educational objective:
Schizotypal personality disorder is characterized by a long-standing pattern of eccentric behavior, odd beliefs, perceptual distortions, and social anxiety despite familiarity.

References

- Schizotypal personality disorder: a current review.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Personality disorders
Subject	System	Topic

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A 20-year-old college student is brought to the emergency department by his roommate. The patient is frightened and claims that campus police are following him and plotting to kill him. His roommate says that the patient seemed "totally normal" until a few days ago, when he began to stay up all night to prepare for final exams. The patient has no known medical or psychiatric history, but his father has schizophrenia. Blood pressure is 150/95 mm Hg and pulse is 110/min. Examination shows clear lungs and tachycardia with normal S1 and S2. The abdomen is soft and nontender. Extraocular movements are intact, and the pupils are dilated. The patient is diaphoretic. He appears hypervigilant, paces during the examination, and has mildly pressured speech. Which of the following is the most likely diagnosis in this patient?

A. Bipolar disorder, manic episode

B. Brief psychotic disorder

C. Delusional disorder

D. Schizophreniform disorder

E. Substance-induced psychotic disorder

Submit

A 20-year-old college student is brought to the emergency department by his roommate. The patient is frightened and claims that campus police are following him and plotting to kill him. His roommate says that the patient seemed "totally normal" until a few days ago, when he began to stay up all night to prepare for final exams. The patient has no known medical or psychiatric history, but his father has schizophrenia. Blood pressure is 150/95 mm Hg and pulse is 110/min. Examination shows clear lungs and tachycardia with normal S1 and S2. The abdomen is soft and nontender. Extraocular movements are intact, and the pupils are dilated. The patient is diaphoretic. He appears hypervigilant, paces during the examination, and has mildly pressured speech. Which of the following is the most likely diagnosis in this patient?

- A. Bipolar disorder, manic episode (4%)
- B. Brief psychotic disorder (19%)
- C. Delusional disorder (2%)
- D. Schizophreniform disorder (3%)
- ✓ E. Substance-induced psychotic disorder (70%)

Omitted
Correct answer
E

70%
Answered correctly

02 secs
Time Spent

01/11/2020
Last Updated

Explanation

The misuse of stimulants by college students to enhance academic performance is prevalent. This patient's acute onset of paranoia, restlessness, and hypervigilance, and physical signs of **mydriasis**, tachycardia, hypertension, and diaphoresis, are most likely due to **stimulant intoxication**. Transient paranoid psychosis can develop in intoxication with all major stimulants, including prescription medications for attention-deficit hyperactivity disorder (eg, amphetamines, methylphenidate). **Substance-induced psychotic disorder** is diagnosed when stimulant intoxication

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The misuse of stimulants by college students to enhance academic performance is prevalent. This patient's acute onset of paranoia, restlessness, and hypervigilance, and physical signs of **mydriasis**, tachycardia, hypertension, and diaphoresis, are most likely due to **stimulant intoxication**. Transient paranoid psychosis can develop in intoxication with all major stimulants, including prescription medications for attention-deficit hyperactivity disorder (eg, amphetamines, methylphenidate). **Substance-induced psychotic disorder** is diagnosed when stimulant intoxication presents with prominent psychotic symptoms.

Substance-induced psychotic disorders must be differentiated from primary psychiatric disorders such as bipolar manic episodes and psychotic disorders. This student's prominent physical signs and lack of psychiatric history, combined with the temporal association between staying up to study and acute onset of psychosis, make a stimulant-induced psychotic disorder more likely.

(Choice A) Patients experiencing a bipolar manic episode can also have decreased sleep, pressured speech, physical restlessness, and psychotic features. However, the temporal association of studying for exams and the patient's abnormal vital signs, mydriasis, and diaphoresis make substance intoxication more likely.

(Choice B) Primary psychotic disorders are diagnoses of exclusion that require ruling out substance use and medical etiologies. Brief psychotic disorder is a rare condition characterized by acute onset of ≥1 psychotic symptoms (eg, delusions, hallucinations, disorganized speech or behavior) lasting ≥1 days but <1 month, with eventual complete resolution. This patient's physical findings (ie, mydriasis, tachycardia, hypertension, diaphoresis), the prevalence of stimulant misuse on college campuses, and the temporal association between intense studying and symptom onset make substance-induced psychosis much more likely than brief psychotic disorder.

(Choices C and D) These diagnoses would not be considered at this point due to insufficient duration of psychotic symptoms. The essential feature of delusional disorder is ≥1 delusions lasting ≥1 months without other psychotic symptoms. Schizophreniform disorder involves ≥2 psychotic symptoms lasting ≥1 months but <6 months.

Educational objective:
Stimulant intoxication can present with paranoid ideation and must be differentiated from primary psychiatric disorders. Physical signs of stimulant intoxication include mydriasis, tachycardia, hypertension, and diaphoresis.

References

- Toxicity of amphetamines: an update.

Substance-induced psychotic disorders must be differentiated from primary psychiatric disorders such as bipolar manic episodes and psychotic disorders. This student's prominent physical signs and lack of psychiatric history, combined with the temporal association between staying up to study and acute onset of psychosis, make a stimulant-induced psychotic disorder more likely.

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Educational objective:
Stimulant intoxication can present with paranoid ideation and must be differentiated from primary psychiatric disorders. Physical signs of stimulant intoxication include mydriasis, tachycardia, hypertension, and diaphoresis.

References

- Toxicity of amphetamines: an update.
- Misuse of stimulant medication among college students: a comprehensive review and meta-analysis.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Substance-induced psychotic disorder
Subject	System	Topic

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A 35-year-old man comes to the office due to problems with irritability, anxiety, and low self-esteem. He was recently fired due to poor work performance at his data entry job and worries about finding a new job and supporting himself. The patient is currently in a relationship but mentions that his girlfriend is upset by his frequent lateness and forgetfulness and has threatened to leave him. Further history indicates that his problems are long-standing and date back to childhood when he had behavioral problems in school. The patient frequently feels overwhelmed due to being disorganized. He frequently procrastinates, is bored easily at work, and jumps to another project before completing what he is working on. The patient drinks 3 or 4 beers a week and smokes marijuana twice a month. On mental status examination, he is cooperative and talkative but appears tense, restless, and easily distracted. Which of the following is the most likely diagnosis in this patient?

A. Adjustment disorder
B. Attention-deficit hyperactivity disorder
C. Bipolar disorder
D. Borderline personality disorder
E. Generalized anxiety disorder
F. Persistent depressive disorder
G. Substance-induced mood disorder

Submit

A 35-year-old man comes to the office due to problems with irritability, anxiety, and low self-esteem. He was recently fired due to poor work performance at his data entry job and worries about finding a new job and supporting himself. The patient is currently in a relationship but mentions that his girlfriend is upset by his frequent lateness and forgetfulness and has threatened to leave him. Further history indicates that his problems are long-standing and date back to childhood when he had behavioral problems in school. The patient frequently feels overwhelmed due to being disorganized. He frequently procrastinates, is bored easily at work, and jumps to another project before completing what he is working on. The patient drinks 3 or 4 beers a week and smokes marijuana twice a month. On mental status examination, he is cooperative and talkative but appears tense, restless, and easily distracted. Which of the following is the most likely diagnosis in this patient?

- A. Adjustment disorder (1%)
- ✓ B. Attention-deficit hyperactivity disorder (84%)
- C. Bipolar disorder (1%)
- D. Borderline personality disorder (3%)
- E. Generalized anxiety disorder (5%)
- F. Persistent depressive disorder (2%)
- G. Substance-induced mood disorder (1%)

Omitted
Correct answer
B

84%
Answered correctly

06 secs
Time Spent

07/03/2020
Last Updated

Explanation

Attention-deficit hyperactivity disorder	

Clinical features	• Inattentive &/or hyperactive/impulsive symptoms for ≥6 months
	  ◦ **Inattentive symptoms:** Difficulty focusing, distractible, does not listen or follow instructions, disorganized, forgetful, loses/misplaces objects
	  ◦ **Hyperactive/impulsive symptoms:** Fidgety, unable to sit still, "driven by a motor," hyper-talkative, interrupts, blurts out answers
	• Several symptoms present before age 12; may persist to adulthood
	• Symptoms occur in at least 2 settings (home, school) & cause functional impairment

Treatment	• Stimulants (methylphenidate, amphetamines) • Behavioral therapy

This patient's disorganization, forgetfulness, excessive procrastination, difficulty completing tasks, irritability, restlessness, and distractibility are suggestive of adult **attention-deficit hyperactivity disorder** (ADHD). Evidence of behavioral problems since childhood (some symptoms prior to age 12 are required) and the chronic nature of his difficulties further support this diagnosis. **ADHD frequently persists** into **adulthood** and may go unrecognized or misdiagnosed as an anxiety, mood, or personality disorder.

Although the same diagnostic criteria are used, adults with ADHD are **less overtly hyperactive** compared to children. They typically experience a sense of inner restlessness, irritability, impulsive speech, and decision making and executive skills dysfunction (eg, difficulties in organizing/prioritizing tasks, lack of follow-through, forgetfulness, poor time management) that can result in significant social and occupational impairment (eg, unemployment, reduced productivity, relationship difficulties). Stimulant medication is the first-line treatment for adult ADHD.

(Choice A) Adjustment disorder is diagnosed when symptoms occur in response to a stressor and do not meet the criteria for another mental disorder. This patient's symptoms and impairment are long-standing and are likely the cause of his employment and relationship difficulties.

(Choice C) Bipolar disorder is differentiated from ADHD in adults by an episodic course consisting of discrete periods of severe manic or depressive symptoms. Although mood instability, impulsivity, restlessness, and talkativeness are seen in both disorders, this patient has a chronic (not episodic) course and lacks other bipolar symptoms.

(Choice D) Patients with borderline personality disorder also exhibit emotional dysregulation and impulsivity, but this patient lacks the identity

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Although the same diagnostic criteria are used, adults with ADHD are **less overtly hyperactive** compared to children. They typically experience a sense of inner restlessness, irritability, impulsive speech, and decision making and executive skills dysfunction (eg, difficulties in organizing/prioritizing tasks, lack of follow-through, forgetfulness, poor time management) that can result in significant social and occupational impairment (eg, unemployment, reduced productivity, relationship difficulties). Stimulant medication is the first-line treatment for adult ADHD.

(Choice A) Adjustment disorder is diagnosed when symptoms occur in response to a stressor and do not meet the criteria for another mental disorder. This patient's symptoms and impairment are long-standing and are likely the cause of his employment and relationship difficulties.

(Choice C) Bipolar disorder is differentiated from ADHD in adults by an episodic course consisting of discrete periods of severe manic or depressive symptoms. Although mood instability, impulsivity, restlessness, and talkativeness are seen in both disorders, this patient has a chronic (not episodic) course and lacks other bipolar symptoms.

(Choice D) Patients with borderline personality disorder also exhibit emotional dysregulation and impulsivity, but this patient lacks the identity disturbance and recurrent suicidal behaviors that characterize this disorder.

(Choice E) Generalized anxiety disorder involves excessive anxiety about multiple issues. This patient's anxiety is related to realistic worries about his job situation.

(Choice F) Patients with ADHD often struggle with poor self-esteem due to years of underachievement and may experience comorbid depression. However, this patient does not have sufficient depressive symptoms to diagnose persistent depressive disorder.

(Choice G) The amount and extent of this patient's alcohol and marijuana use are insufficient to explain his symptoms and lifelong impairment.

Educational objective:
Attention-deficit hyperactivity disorder (ADHD) often persists into adulthood. Adults with ADHD are less overtly hyperactive but experience chronic problems with distractibility, disorganization, and impulsivity that cause significant social and occupational impairment.

References

- Adult attention-deficit/hyperactivity disorder diagnosis, management, and treatment in the DSM-5 era.
- Differential diagnosis, comorbidity, and treatment of attention-deficit/hyperactivity disorder in relation to bipolar disorder or borderline personality disorder in adults.

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A 21-year-old woman comes to the office at her mother's urging due to irritability and low mood. Two months ago, the patient was sexually assaulted in the parking lot of her workplace. Since then, she has felt that "the world is not a safe place" and is reluctant to go back to work, preferring to stay home. In the middle of the day she will "space out" and hear the voice of her assailant, "as if I am right there in the parking lot." At other times, she feels a sense of unreality as if she is outside her body and cannot recall the exact details about what happened, and says that, "I feel like I am going crazy." The patient has become withdrawn and either avoids her friends or becomes "snappy" when they visit her. She has lost interest in her hobbies of writing poetry and exercising. There is a family history of major depression in the patient's mother and schizoaffective disorder in her maternal grandmother. Which of the following is the most likely diagnosis?

A. Acute stress disorder
B. Agoraphobia
C. Brief psychotic disorder
D. Depersonalization/derealization disorder
E. Dissociative amnesia
F. Major depressive disorder
G. Post-traumatic stress disorder

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- A. Acute stress disorder (11%)
- B. Agoraphobia (0%)
- C. Brief psychotic disorder (0%)
- D. Depersonalization/derealization disorder (12%)
- E. Dissociative amnesia (1%)
- F. Major depressive disorder (1%)
- ✓ G. Post-traumatic stress disorder (73%)

Omitted
Correct answer
G

73%
Answered correctly

02 secs
Time Spent

02/25/2020
Last Updated

Explanation

Post-traumatic stress disorder	
Clinical features	• Exposure to life-threatening trauma • Nightmares, flashbacks, intrusive memories • Avoidance of reminders, amnesia for event • Emotional detachment, negative mood, decreased interest in activities • Sleep disturbance, hypervigilance, irritability • Duration ≥1 month

This patient's 2-month history of intrusive flashbacks, avoidance, dissociative symptoms (amnesia, depersonalization), and emotional detachment following a traumatic incident are suggestive of **post-traumatic stress disorder (PTSD)**. Patients suffering from PTSD repeatedly relive a traumatic, life-threatening event in the form of **nightmares and/or flashbacks** (in which the patient feels as if the traumatic event is actually recurring). Individuals will often **avoid** people, places, and activities that remind them of the traumatic event and experience sleep disturbance, **hypervigilance**, low mood, and **irritability**. PTSD requires persistent symptoms for **≥1 month**.

(Choice A) Acute stress disorder involves symptoms similar to those observed in PTSD, which last 3 days to 1 month after trauma exposure. Symptoms may remit or progress to PTSD after this time. This patient has symptoms lasting 2 months and so meets the criteria for PTSD.

(Choice B) In agoraphobia, the patient avoids situations where escape may not be possible or help is not available if panic or other embarrassing symptoms occur. If the avoidance is secondary to a traumatic event and the criteria for PTSD are met, PTSD is the accurate diagnosis.

(Choice C) This patient's experience of hearing her assailant's voice is characteristic of an intrusive flashback that occurs in PTSD. Brief psychotic disorder is characterized by acute onset of psychotic symptoms (delusions, hallucinations) lasting ≥1 day and ≤1 month.

(Choices D and E) Patients with PTSD often experience a range of dissociative symptoms, such as derealization (detachment from surroundings), depersonalization (detachment from self), or a lapse of autobiographical memory regarding the traumatic event (dissociative amnesia). If the dissociation is part of a cluster of symptoms that meets the criteria for PTSD, PTSD is the overarching and correct diagnosis.

(Choice F) Individuals with PTSD commonly experience negative mood states, including decreased interest in activities and feelings of detachment from others. However, this patient does not meet the full criteria for major depression, and her social withdrawal and loss of interest

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(Choice F) Individuals with PTSD commonly experience negative mood states, including decreased interest in activities and feelings of detachment from others. However, this patient does not meet the full criteria for major depression, and her social withdrawal and loss of interest are better explained by PTSD.

Educational objective:
Post-traumatic stress disorder is characterized by intrusive thoughts, nightmares, flashbacks, avoidance of trauma reminders, hypervigilance, and sleep disturbance lasting ≥1 month.

References

- Post-traumatic stress disorder.
- PTSD, emotion dysregulation, and dissociative symptoms in a highly traumatized sample.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Post traumatic stress disorder
Subject	System	Topic

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A healthy 8-year-old boy is brought to the office by his parents for an annual checkup. Both parents express concern about their son's behavior. The mother says, "He never listens and I am always worried that he is going to run out into the street without looking. He rarely sits still and is always running and jumping on the furniture." The father adds, "He talks all the time, interrupts me when I'm speaking, and, despite multiple reminders, forgets to do his chores and misplaces or loses his books or sporting equipment. We thought he would grow out of it as he got older, but it seems to be getting worse." Physical examination is unremarkable. Which of the following would be most helpful in establishing the diagnosis?

A. Brain imaging
B. Hearing test
C. Quantitative EEG
D. Speech and language evaluation
E. Teacher evaluations
F. Toxicology screening

Submit

A healthy 8-year-old boy is brought to the office by his parents for an annual checkup. Both parents express concern about their son's behavior. The mother says, "He never listens and I am always worried that he is going to run out into the street without looking. He rarely sits still and is always running and jumping on the furniture." The father adds, "He talks all the time, interrupts me when I'm speaking, and, despite multiple reminders, forgets to do his chores and misplaces or loses his books or sporting equipment. We thought he would grow out of it as he got older, but it seems to be getting worse." Physical examination is unremarkable. Which of the following would be most helpful in establishing the diagnosis?

- A. Brain imaging (0%)
- B. Hearing test (7%)
- C. Quantitative EEG (1%)
- D. Speech and language evaluation (5%)
- ✓ E. Teacher evaluations (84%)
- F. Toxicology screening (0%)

Omitted
Correct answer
E

84%
Answered correctly

05 secs
Time Spent

04/09/2020
Last Updated

Explanation

Attention-deficit hyperactivity disorder	
	• Inattentive &/or hyperactive/impulsive symptoms for ≥6 months

Attention-deficit hyperactivity disorder	

Clinical features	• Inattentive &/or hyperactive/impulsive symptoms for ≥6 months
	  ◦ **Inattentive symptoms:** Difficulty focusing, distractible, does not listen or follow instructions, disorganized, forgetful, loses/misplaces objects
	  ◦ **Hyperactive/impulsive symptoms:** Fidgety, unable to sit still, "driven by a motor," hyper-talkative, interrupts, blurts out answers
	• Several symptoms present before age 12; may persist to adulthood
	• Symptoms occur in at least 2 settings (home, school) & cause functional impairment

Treatment	• Stimulants (methylphenidate, amphetamines) • Behavioral therapy

This patient's inattention, inability to sit still, and impulsivity are concerning for possible attention-deficit hyperactivity disorder **(ADHD)**. The diagnosis of ADHD is made clinically and requires evidence of **symptoms** in **≥2 settings** (eg, home, school, after-school program). Demonstration of functional impairment due to symptoms (eg, academic difficulties, impaired social relationships, peer rejection) is also required.

Obtaining **teacher evaluations** to determine if the symptoms extend beyond the home environment would be the most helpful step in establishing the diagnosis. Teachers can provide observations of classroom behavior over an extended period (eg, 6 months) and assist in determining if the symptoms are excessive compared to same-age peers (eg, comparative degree of inattentiveness, difficulty staying seated and/or following directions, talkativeness, disruptive classroom behavior). Teacher evaluations may also incorporate validated ADHD-specific rating scales, which can help assess core symptom severity and monitor response to treatment.

(Choices A and C) Brain imaging and EEG are not performed routinely in the work-up of ADHD in the absence of other neurological symptoms. They would not be indicated in this patient with no other medical history and a normal physical examination.

(Choice B) A hearing test is not routinely performed in the initial evaluation of ADHD, and hearing impairment would have likely been identified by this age. However, a hearing test should be performed if coexisting hearing impairment is suspected.

(Choice D) A speech and language evaluation would be warranted if the patient had problems with speech articulation/production or his language

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(Choice D) A speech and language evaluation would be warranted if the patient had problems with speech articulation/production or his language development was delayed.

(Choice F) Toxicology screening is not routinely performed in the assessment of ADHD. It is less likely to be helpful in the assessment of this patient who lacks any history pointing to medical illness or substance use.

Educational objective:
Diagnosis of attention-deficit hyperactivity disorder requires evidence of inattentive and/or hyperactive/impulsive symptoms for ≥6 months in ≥2 settings (eg, home, school, after-school program). Teacher evaluations can assist in diagnosis.

References

- Diagnosis and management of ADHD in children.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Attention deficit hyperactivity disorder
Subject	System	Topic

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Behavioral science	Psychiatric/Behavioral & Substance Abuse	Attention deficit hyperactivity disorder
Subject	System	Topic

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A 40-year-old woman is brought to the emergency department by her roommate due to significant left leg weakness. The symptom began 3 days ago after her father had a heart attack. There is no personal or family history of neurological disease; surgical history includes liposuction of the thighs and varicose vein removal. She does not use tobacco, alcohol, or illicit drugs. Temperature is 36.7 C (98.1 F), blood pressure is 123/81 mm Hg, pulse is 62/min, and respirations are 14/min. Physical examination reveals symmetric 2+ deep tendon reflexes as well as normal muscle bulk and tone bilaterally in the upper and lower extremities. Laboratory testing and neurologic imaging reveal no abnormalities. Which of the following is the most likely diagnosis?

A. Body dysmorphic disorder
B. Conversion disorder
C. Factitious disorder
D. Illness anxiety disorder
E. Malingering
F. Somatic symptom disorder

Submit

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- A. Body dysmorphic disorder (0%)
- ✓ B. Conversion disorder (66%)
- C. Factitious disorder (3%)
- D. Illness anxiety disorder (4%)
- E. Malingering (1%)
- F. Somatic symptom disorder (22%)

Omitted
Correct answer
B

66%
Answered correctly

02 secs
Time Spent

06/06/2020
Last Updated

Explanation

Key features of somatic symptom & related disorders	
Somatic symptom disorder	Excessive anxiety & preoccupation with ≥1 unexplained symptoms

Key features of somatic symptom & related disorders	
Somatic symptom disorder	Excessive anxiety & preoccupation with ≥1 unexplained symptoms
Illness anxiety disorder	Fear of having a serious illness despite few or no symptoms & consistently negative evaluations
Conversion disorder (functional neurologic symptom disorder)	Neurologic symptom incompatible with known disease
Factitious disorder	Intentional falsification of illness in the absence of obvious external rewards
Malingering	Falsification or exaggeration of symptoms to obtain external rewards

This patient's acute onset of muscular weakness following a stressful incident, normal neurological examination, and negative workup are suggestive of **conversion disorder** (functional neurologic symptom disorder). Conversion disorder is characterized by symptoms or **deficits of voluntary motor** and/or **sensory function** that are **incompatible** with any **recognized neurological condition** and cannot be explained by another medical or mental disorder. Common symptoms of conversion disorder may include weakness, paralysis, gait disturbance, blindness, diplopia, aphonia, anesthesia, or nonepileptic seizures (also called psychogenic seizures).

The phenomenon of la belle indifférence (ie, incongruous lack of concern about symptoms) has been associated with conversion disorder but is not pathognomonic, occurs at equal frequency in true neurological disorders, and should not be used to make the diagnosis. In fact, patients with conversion disorder may be very distressed by their symptoms.

(Choice A) Body dysmorphic disorder involves an excessive preoccupation with perceived defects in physical appearance (eg, nose shape) as opposed to a neurologic deficit (eg, leg weakness).

(Choice C) In factitious disorder, patients deliberately falsify symptoms due to their desire to assume the sick role. There is no evidence that this patient is intentionally falsifying her symptoms, and given her recent stress (eg, her father's heart attack), conversion disorder is more likely.

(Choice D) Illness anxiety disorder is characterized by excessive fears of having a serious physical disease. The fear is usually due to

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(Choice D) Illness anxiety disorder is characterized by excessive fears of having a serious physical disease. The fear is usually due to misinterpretation of bodily symptoms or normal functions (eg, a man with gas pain becoming preoccupied with having colon cancer).

(Choice E) Malingering is the purposeful falsification of symptoms for obvious external benefit (eg, a patient feigning hemiparesis to receive disability benefits).

(Choice F) Somatic symptom disorder is characterized by excessive and persistent health anxiety and preoccupation with multiple somatic symptoms; it does not present with a clearly incompatible neurological examination. This patient does not express any concern about her impairment and seeks care only when brought in by her roommate, effectively ruling out somatic symptom disorder.

Educational objective:
Conversion disorder is characterized by neurologic symptoms and examination findings that are incompatible with a known neurological disease. Patients do not consciously produce the symptoms like in factitious disorder or malingering, and the condition may cause significant distress/impairment.

References

- Conversion disorder - mind versus body: a review.

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A 24-year-old man comes to the office for treatment of opioid use disorder. The patient has a 6-year history of heroin use and his addiction has cost him most of his savings. His boss has spoken to him about his erratic moods and inconsistent work performance, and he is now in danger of losing his job. The patient asks for help, saying, "I have tried so hard to do this on my own. My parents have spent a lot of money on counseling. It helps for a while, but then I go back to using. They are fed up and refuse to see me anymore. I don't want to use, but the craving is so strong." The physician refers the patient to an opioid treatment program where he is started on maintenance therapy with methadone. During the next followup appointment, he reports a marked reduction in his cravings. Which of the following properties of the administered drug is most likely responsible for the improvement in this patient's condition?

A. Long half-life
B. Low potency
C. Low risk of dependence
D. Low risk of respiratory depression
E. Low risk of withdrawal
F. Partial agonist activity

Submit

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- ✓ A. Long half-life (54%)
- B. Low potency (1%)
- C. Low risk of dependence (3%)
- D. Low risk of respiratory depression (0%)
- E. Low risk of withdrawal (3%)
- F. Partial agonist activity (36%)

Omitted
Correct answer
A

54%
Answered correctly

02 secs
Time Spent

02/18/2020
Last Updated

Explanation

Opioid use disorder is a significant health concern in the United States and has high levels of morbidity and mortality. Opioids are prescribed for their analgesic properties, but they also have euphoric effects with the potential for tolerance, dependence, and abuse. Both street and

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Explanation

Opioid use disorder is a significant health concern in the United States and has high levels of morbidity and mortality. Opioids are prescribed for their analgesic properties, but they also have euphoric effects with the potential for tolerance, dependence, and abuse. Both street and prescription opioids have a high abuse potential. Treatment of addiction includes the use of alternative opioid agonists with fewer euphoric effects and less potential for acute withdrawal and craving, thereby allowing patients to function more productively on a daily basis. In the United States, the most commonly used agonists are **methadone** and buprenorphine.

Methadone is a **full mu-opioid receptor agonist** used for withdrawal and maintenance treatment for opioid use disorder. It has a **long half-life**, which allows it to effectively **suppress cravings and withdrawal** symptoms; it also blocks the euphoric effects of other opioids by maintaining high tolerance levels **(Choice B)**. Adverse effects of methadone include QT interval prolongation and respiratory depression, accounting for its lethality in overdose.

(Choices C and E) Methadone, like other opioids, produces dependence, and abrupt discontinuation of methadone causes withdrawal symptoms. The symptoms of methadone withdrawal are more prolonged and less severe than those of heroin due to methadone's long half-life but are still present.

(Choice D) Methadone can cause respiratory depression with the potential for lethality in overdose, especially when combined with other CNS depressants.

(Choice F) Buprenorphine is a partial agonist used alone or with naloxone (an opioid antagonist) for treatment of opioid use disorder. Buprenorphine is less likely to cause respiratory depression and mortality in overdose compared with methadone.

Educational objective:
Methadone is a potent, long-acting opioid agonist used in the maintenance treatment of opioid use disorder. Its prolonged effects suppress withdrawal symptoms and cravings .

References

- American Society of Addiction Medicine (ASAM) national practice guideline for the use of medications in the treatment of addiction involving opioid use.
- Non-medical prescription opioid use and prescription opioid use disorder: a review.

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A 12-year-old boy is brought to the office due to behavioral problems. His parents are upset about his poor grades and recent school suspension for setting fires in the locker room and stealing another student's cell phone. They say that the boy has always been impulsive, had a lot of energy, and become angry and argumentative easily, but over the past year his aggressive behavior "has gotten out of control." The patient says that the fires were an "accident," although he admits to being angry at the coach for kicking him off the basketball team. Regarding the theft, he jokingly says, "People deserve to have their phones stolen when they are stupid enough to leave them in plain sight." The patient has a history of getting into trouble for talking back to teachers, skipping class, and getting into fights since the fourth grade. He has no medical history. There is a family history of bipolar disorder and alcohol dependence. The patient smokes cigarettes occasionally but denies illicit drug or alcohol use. Which of the following is the most likely diagnosis in this patient?

A. Antisocial personality disorder
B. Attention-deficit hyperactivity disorder
C. Conduct disorder
D. Intermittent explosive disorder
E. Oppositional defiant disorder
F. Pyromania

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- A. Antisocial personality disorder (8%)
- B. Attention-deficit hyperactivity disorder (1%)
- ✓ C. Conduct disorder (78%)
- D. Intermittent explosive disorder (0%)
- E. Oppositional defiant disorder (10%)
- F. Pyromania (0%)

Omitted
Correct answer
C

78%
Answered correctly

02 secs
Time Spent

01/25/2020
Last Updated

Explanation

Conduct disorder	
Clinical features	• Pattern of violating major societal norms or rights of others over the previous 12 months • Aggression & cruelty toward people & animals • Destruction of property, setting fires • Serious violation of rules (truancy, running away) • Deceitfulness &/or theft (lying, stealing)

This patient's history of fire setting, stealing, and aggressive behavior is most likely explained by **conduct disorder**. Conduct disorder is a psychiatric disorder of children and adolescents and is characterized by a pattern of behaviors that **violate major societal norms** or the **rights of others**. Other behaviors seen in conduct disorder include bullying, frequent physical fights, using weapons (eg, bat, gun, knife), torturing animals, breaking into houses, and sexual coercion. Conduct disorder generally presents in middle childhood to adolescence and is more common in boys. Children with conduct disorder are at greater risk for developing antisocial personality disorder as adults.

(Choice A) Antisocial personality disorder is not diagnosed in individuals under age 18. It involves a pattern of violation of basic societal rules and the rights of others and requires a history of some symptoms of conduct disorder before age 15.

(Choice B) This patient does not have enough inattentive and hyperactive symptoms to diagnose attention-deficit hyperactivity disorder, and his overall behavior is more characteristic of conduct disorder.

(Choice D) Aggression occurs in both conduct and intermittent explosive disorders. However, in intermittent explosive disorder, aggression is not premeditated or committed to achieve a tangible objective (eg, money, power, intimidation). This disorder would not explain this patient's stealing and fire setting.

(Choice E) Oppositional defiant disorder (ODD) involves a pattern of angry/irritable mood and argumentative/defiant behavior toward authority figures. Symptoms of ODD are less severe than those of conduct disorder. ODD does not include physical aggression, stealing, or destruction of property, as seen in this patient.

(Choice F) Pyromania is characterized by intentional and repeated fire setting with no obvious motive; it does not involve other behaviors seen in

and the rights of others and requires a history of some symptoms of conduct disorder before age 15.

(Choice B) This patient does not have enough inattentive and hyperactive symptoms to diagnose attention-deficit hyperactivity disorder, and his overall behavior is more characteristic of conduct disorder.

(Choice D) Aggression occurs in both conduct and intermittent explosive disorders. However, in intermittent explosive disorder, aggression is not premeditated or committed to achieve a tangible objective (eg, money, power, intimidation). This disorder would not explain this patient's stealing and fire setting.

(Choice E) Oppositional defiant disorder (ODD) involves a pattern of angry/irritable mood and argumentative/defiant behavior toward authority figures. Symptoms of ODD are less severe than those of conduct disorder. ODD does not include physical aggression, stealing, or destruction of property, as seen in this patient.

(Choice F) Pyromania is characterized by intentional and repeated fire setting with no obvious motive; it does not involve other behaviors seen in conduct disorder (eg, lying, theft, cruelty to others). A separate diagnosis of pyromania is not given when fire setting occurs as part of conduct disorder.

Educational objective:
Conduct disorder involves a persistent pattern of violating major societal norms or the rights of others. Behaviors include aggression toward people and animals, deceitfulness or theft, destruction of property, and serious violation of rules.

References

- Disruptive behavior in preschool children: distinguishing normal misbehavior from markers of current and later childhood conduct disorder.
- Can callous-unemotional traits enhance the understanding, diagnosis, and treatment of serious conduct problems in children and adolescents? A comprehensive review.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Conduct disorder
Subject	System	Topic

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A 33-year-old man is hospitalized after neighbors called the police to report that he has been singing loudly and playing the piano "nonstop" all day and night for the last month. The patient says his mood is "terrific," claims he is related to the President, and hears voices telling him he is going to be a famous entertainer. While in the hospital, he makes inappropriate sexual advances toward some of the female nurses. He has a history of 9 psychiatric hospitalizations starting at age 22 for mood and psychotic symptoms. In between hospitalizations, the patient has heard voices commenting on his appearance and has believed that secret cameras have been monitoring him, but he has had no mood symptoms. Which of the following is the most likely diagnosis in this patient?

A. Bipolar disorder with psychotic features
B. Delusional disorder
C. Major depression with psychotic features
D. Schizoaffective disorder
E. Schizophrenia
F. Schizophreniform disorder

Submit

A 33-year-old man is hospitalized after neighbors called the police to report that he has been singing loudly and playing the piano "nonstop" all day and night for the last month. The patient says his mood is "terrific," claims he is related to the President, and hears voices telling him he is going to be a famous entertainer. While in the hospital, he makes inappropriate sexual advances toward some of the female nurses. He has a history of 9 psychiatric hospitalizations starting at age 22 for mood and psychotic symptoms. In between hospitalizations, the patient has heard voices commenting on his appearance and has believed that secret cameras have been monitoring him, but he has had no mood symptoms. Which of the following is the most likely diagnosis in this patient?

- A. Bipolar disorder with psychotic features (27%)
- B. Delusional disorder (3%)
- C. Major depression with psychotic features (0%)
- ✓ D. Schizoaffective disorder (30%)
- E. Schizophrenia (31%)
- F. Schizophreniform disorder (6%)

Omitted
Correct answer
D

30%
Answered correctly

03 secs
Time Spent

02/16/2020
Last Updated

Explanation

Schizoaffective disorder	
	• Major depressive or manic episode concurrent with symptoms of schizophrenia

Schizoaffective disorder	
DSM-5 criteria	• Major depressive or manic episode concurrent with symptoms of schizophrenia • Lifetime history of **delusions or hallucinations for ≥2 weeks in the absence of major depressive or manic episode** • Mood episodes are prominent & recur throughout illness • Not due to substances or another medical condition
Differential diagnosis	• **Major depressive or bipolar disorder with psychotic features:** Psychotic symptoms occur exclusively during mood episodes • **Schizophrenia:** Mood symptoms may be present for relatively brief periods

This patient's current symptoms and psychiatric history are consistent with **schizoaffective disorder**. In addition to currently exhibiting symptoms of **mania** (eg, elevated mood, decreased need for sleep, hypersexuality, grandiose delusions), he also has a history of **delusions** and **hallucinations** occurring **in the absence of** a major **mood episode** (ie, psychotic symptoms without mood symptoms in between hospitalizations). A lifetime history of at least 2 weeks of psychotic symptoms in the absence of a mood episode is a key requirement for the schizoaffective disorder diagnosis.

Differentiating schizoaffective disorder from bipolar disorder with psychotic features or major depression with psychotic features requires determining the temporal relationship between psychotic symptoms and mood symptoms. In bipolar disorder and major depression with psychotic features, psychotic symptoms occur exclusively during manic or depressive episodes **(Choices A and C)**; there are no psychotic symptoms outside of mood episodes.

Unlike schizoaffective disorder, a diagnosis of schizophrenia does not include prominent mood symptoms that meet the criteria for manic and/or depressive episodes **(Choice E)**.

(Choice B) Delusional disorder involves ≥1 delusions for at least 1 month in the absence of other psychotic symptoms (eg, hallucinations, disorganized speech and behavior).

(Choice F) Schizophreniform disorder has the same symptoms as schizophrenia (eg, delusions, hallucinations, disorganized speech and/or

of **mania** (eg, elevated mood, decreased need for sleep, hypersexuality, grandiose delusions), he also has a history of **delusions** and **hallucinations** occurring **in the absence of** a major **mood episode** (ie, psychotic symptoms without mood symptoms in between hospitalizations). A lifetime history of at least 2 weeks of psychotic symptoms in the absence of a mood episode is a key requirement for the schizoaffective disorder diagnosis.

Differentiating schizoaffective disorder from bipolar disorder with psychotic features or major depression with psychotic features requires determining the temporal relationship between psychotic symptoms and mood symptoms. In bipolar disorder and major depression with psychotic features, psychotic symptoms occur exclusively during manic or depressive episodes **(Choices A and C)**; there are no psychotic symptoms outside of mood episodes.

Unlike schizoaffective disorder, a diagnosis of schizophrenia does not include prominent mood symptoms that meet the criteria for manic and/or depressive episodes **(Choice E)**.

(Choice B) Delusional disorder involves ≥1 delusions for at least 1 month in the absence of other psychotic symptoms (eg, hallucinations, disorganized speech and behavior).

(Choice F) Schizophreniform disorder has the same symptoms as schizophrenia (eg, delusions, hallucinations, disorganized speech and/or behavior, negative symptoms), but the duration is ≥1 month and <6 months.

Educational objective:
For diagnosis of schizoaffective disorder, psychosis must occur in the absence of major mood episodes, but mood episodes must be present for a majority of this lifelong illness. In bipolar disorder and major depression with psychotic features, psychotic symptoms occur exclusively during mood episodes.

References

- Schizoaffective disorder in the DSM-5.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Schizoaffective disorder
Subject	System	Topic

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A 72-year-old man is hospitalized due to a leg injury following a high-speed motor vehicle collision. Medical history is significant for hypertension and hypercholesterolemia treated with hydrochlorothiazide and simvastatin. Examination shows localized swelling and severe tenderness under the right knee; the presence of a tibial fracture is confirmed by imaging. The patient undergoes an open reduction and internal fixation without any perioperative complications. On the first postoperative night, he describes visual hallucinations of his deceased brother being in the hospital room with him and rambles on about people invading his home. Vital signs are normal. The patient is disoriented and unable to cooperate with the mental status examination. He appears to respond to internal stimuli. Which of the following is the most likely diagnosis?

A. Acute stress disorder
B. Alcohol withdrawal
C. Brief psychotic disorder
D. Delirium
E. Delusional disorder
F. Post-traumatic stress disorder

Submit

A 72-year-old man is hospitalized due to a leg injury following a high-speed motor vehicle collision. Medical history is significant for hypertension and hypercholesterolemia treated with hydrochlorothiazide and simvastatin. Examination shows localized swelling and severe tenderness under the right knee; the presence of a tibial fracture is confirmed by imaging. The patient undergoes an open reduction and internal fixation without any perioperative complications. On the first postoperative night, he describes visual hallucinations of his deceased brother being in the hospital room with him and rambles on about people invading his home. Vital signs are normal. The patient is disoriented and unable to cooperate with the mental status examination. He appears to respond to internal stimuli. Which of the following is the most likely diagnosis?

- A. Acute stress disorder (2%)
- B. Alcohol withdrawal (10%)
- C. Brief psychotic disorder (5%)
- ✓ D. Delirium (80%)
- E. Delusional disorder (0%)
- F. Post-traumatic stress disorder (1%)

Omitted
Correct answer
D

80%
Answered correctly

02 secs
Time Spent

02/23/2020
Last Updated

Explanation

Delirium is an **acute-onset** state characterized by **fluctuating levels of consciousness, impaired attention, and disorientation** that occur as a manifestation of an **underlying medical condition**. **Psychotic** symptoms (eg, hallucinations, delusions) may also occur. Hallucinations are frequently visual and may be accompanied by vague delusions of being threatened or harmed, as seen in this patient.

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Delirium is an **acute-onset** state characterized by **fluctuating levels of consciousness, impaired attention, and disorientation** that occur as a manifestation of an **underlying medical condition**. **Psychotic** symptoms (eg, hallucinations, delusions) may also occur. Hallucinations are frequently visual and may be accompanied by vague delusions of being threatened or harmed, as seen in this patient.

Delirium is **common postoperatively** or in the setting of new or worsening **infections**. It may also occur after the introduction of **new medications** (eg, opioids, benzodiazepines, anticholinergics). The **elderly** are at **higher risk** for delirium.

(Choices A and F) Acute stress disorder, which can last 3 days to 1 month, and post-traumatic stress disorder, which lasts more than 1 month, may both develop after exposure to a traumatic event. They are both characterized by intrusive memories or flashbacks of the traumatic event, avoidance of trauma-related stimuli, negative mood and cognitions about the trauma, hyperarousal, and hypervigilance. Neither is typically associated with disorientation or hallucinations.

(Choice B) Delirium tremens may occur in the context of severe alcohol withdrawal in patients who are alcohol-dependent. It typically occurs 48-96 hours after the last drink. The time course and absence of both restlessness and elevated vital signs make delirium tremens unlikely in this patient.

(Choices C and E) Primary psychotic illnesses can be differentiated from delirium by the presence of a clear sensorium and are excluded if the psychotic symptoms are better explained by a medical condition. Brief psychotic disorder is characterized by psychotic symptoms lasting ≥1 day but <1 month. Delusional disorder is characterized by delusions lasting ≥1 month. Neither would explain this patient's disorientation.

Educational objective:
Delirium is frequently associated with psychotic symptoms. It is differentiated from primary psychotic disorders by fluctuating levels of consciousness, impaired attention, and disorientation. Delirium can occur postoperatively and/or in association with underlying medical illnesses or the introduction of certain medications.

References

- Postoperative delirium.
- Preoperative medication use and postoperative delirium: a systematic review.

Behavioral science Psychiatric/Behavioral & Substance Abuse Delirium

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A 54-year-old man comes to the office due to concerns about having pancreatic cancer after a coworker died of the disease 6 months ago. The patient has no epigastric pain, jaundice, or weight loss. However, he worries constantly because in researching the illness he read that it may not have obvious symptoms in early stages and can be rapidly fatal. The patient saw another physician 2 months ago, who performed a physical examination, laboratory evaluation, and abdominal CT scan. The results were normal and the physician reassured the patient that he did not have cancer. However, the patient reports that he has noticed occasional stomach noises after eating and would like to have additional testing done. Which of the following is the most likely diagnosis?

A. Adjustment disorder with anxiety
B. Conversion disorder
C. Delusional disorder (somatic subtype)
D. Factitious disorder
E. Generalized anxiety disorder
F. Illness anxiety disorder
G. Somatic symptom disorder

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A 54-year-old man comes to the office due to concerns about having pancreatic cancer after a coworker died of the disease 6 months ago. The patient has no epigastric pain, jaundice, or weight loss. However, he worries constantly because in researching the illness he read that it may not have obvious symptoms in early stages and can be rapidly fatal. The patient saw another physician 2 months ago, who performed a physical examination, laboratory evaluation, and abdominal CT scan. The results were normal and the physician reassured the patient that he did not have cancer. However, the patient reports that he has noticed occasional stomach noises after eating and would like to have additional testing done. Which of the following is the most likely diagnosis?

A. Adjustment disorder with anxiety (1%)
B. Conversion disorder (1%)
C. Delusional disorder (somatic subtype) (1%)
D. Factitious disorder (2%)
E. Generalized anxiety disorder (0%)
✓ F. Illness anxiety disorder (86%)
G. Somatic symptom disorder (6%)

Omitted
Correct answer
F

86%
Answered correctly

02 secs
Time Spent

02/19/2020
Last Updated

Explanation

Key features of somatic symptom & related disorders

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Key features of somatic symptom & related disorders	
Somatic symptom disorder	Excessive anxiety & preoccupation with ≥1 unexplained symptoms
Illness anxiety disorder	Fear of having a serious illness despite few or no symptoms & consistently negative evaluations
Conversion disorder (functional neurologic symptom disorder)	Neurologic symptom incompatible with known disease
Factitious disorder	Intentional falsification of illness in the absence of obvious external rewards
Malingering	Falsification or exaggeration of symptoms to obtain external rewards

This patient's excessive worry about having pancreatic cancer despite negative medical evaluation is consistent with **illness anxiety disorder** (IAD, [hypochondriasis]). Patients with IAD are preoccupied with **fears** of having a **serious**, **undiagnosed illness** and are rarely reassured by negative findings on physical examination or laboratory testing. Their fears of illness often become a dominant feature of their lives and lead to **high health care utilization** (eg, doctor shopping, requests for repeated testing). These patients often have catastrophic interpretations of normal physical sensations (eg, this patient thinking that stomach noises could signify cancer).

IAD is differentiated from somatic symptom disorder in that patients with IAD have **minimal or no somatic symptoms**. In contrast, patients with somatic symptom disorder have prominent and typically multiple somatic symptoms **(Choice G)**. Initial management of IAD consists of scheduling regular visits, limiting diagnostic tests and referrals, and focusing on coping and functional improvement.

(Choice A) Although this patient's anxiety about pancreatic cancer was triggered by his coworker's death, adjustment disorder is not diagnosed when symptoms are better explained by another disorder.

(Choice B) Conversion disorder (functional neurologic symptom disorder) is characterized by neurologic symptoms (eg, weakness, nonepileptic seizures) that are inconsistent with any known condition.

(Choice C) Patients with IAD are not delusional and can acknowledge the possibility that they do not have the disease. In contrast, patients with

negative findings on physical examination or laboratory testing. Their fears of illness often become a dominant feature of their lives and lead to **high health care utilization** (eg, doctor shopping, requests for repeated testing). These patients often have catastrophic interpretations of normal physical sensations (eg, this patient thinking that stomach noises could signify cancer).

IAD is differentiated from somatic symptom disorder in that patients with IAD have **minimal or no somatic symptoms**. In contrast, patients with somatic symptom disorder have prominent and typically multiple somatic symptoms **(Choice G)**. Initial management of IAD consists of scheduling regular visits, limiting diagnostic tests and referrals, and focusing on coping and functional improvement.

(Choice A) Although this patient's anxiety about pancreatic cancer was triggered by his coworker's death, adjustment disorder is not diagnosed when symptoms are better explained by another disorder.

(Choice B) Conversion disorder (functional neurologic symptom disorder) is characterized by neurologic symptoms (eg, weakness, nonepileptic seizures) that are inconsistent with any known condition.

(Choice C) Patients with IAD are not delusional and can acknowledge the possibility that they do not have the disease. In contrast, patients with delusional disorder, somatic type, have false, fixed beliefs about the body.

(Choice D) Factitious disorder involves the intentional falsification of illness with the goal of assuming the sick role.

(Choice E) This patient's anxiety appears to be restricted to fears of having a serious illness. Patients with generalized anxiety disorder worry excessively about multiple everyday issues (eg, relationships, work, finances), not just health anxiety.

Educational objective:
Illness anxiety disorder is characterized by excessive concern about having a serious, undiagnosed disease, despite few or no symptoms and negative medical workup.

References

- DSM-5 illness anxiety disorder and somatic symptom disorder: comorbidity, correlates, and overlap with DSM-IV hypochondriasis.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Illness anxiety disorder
Subject	System	Topic

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A 27-year-old woman is brought to the emergency department by her employer due to increasingly paranoid and disorganized behavior over the past year. The patient works as a housekeeper and has had progressive difficulty performing her work responsibilities. She has become increasingly secretive over the past 6 months and recently started talking in a whisper because she believes that listening devices are planted in the walls. Over the past month, she started hiding food and personal possessions in closets and under beds. The patient does not use alcohol or illicit drugs. Vital signs are stable, and physical examination is unremarkable. During the interview, she changes topics frequently and rambles about voices harassing her. Which of the following additional mental status findings is most likely in this patient?

A. Decreased facial expressiveness
B. Euphoric mood
C. Fluctuating level of consciousness
D. Olfactory hallucinations
E. Pressured speech
F. Tactile hallucinations

Submit

A 27-year-old woman is brought to the emergency department by her employer due to increasingly paranoid and disorganized behavior over the past year. The patient works as a housekeeper and has had progressive difficulty performing her work responsibilities. She has become increasingly secretive over the past 6 months and recently started talking in a whisper because she believes that listening devices are planted in the walls. Over the past month, she started hiding food and personal possessions in closets and under beds. The patient does not use alcohol or illicit drugs. Vital signs are stable, and physical examination is unremarkable. During the interview, she changes topics frequently and rambles about voices harassing her. Which of the following additional mental status findings is most likely in this patient?

- ✓ A. Decreased facial expressiveness (54%)
- B. Euphoric mood (2%)
- C. Fluctuating level of consciousness (2%)
- D. Olfactory hallucinations (7%)
- E. Pressured speech (27%)
- F. Tactile hallucinations (5%)

Omitted
Correct answer
A

54%
Answered correctly

02 secs
Time Spent

01/15/2020
Last Updated

Explanation

Schizophrenia	
	• ≥2 of the following (at least 1 symptom from 1-3)

Explanation

Schizophrenia	
Diagnosis	• ≥2 of the following (at least 1 symptom from 1-3) 1. Delusions 2. Hallucinations 3. Disorganized speech 4. Disorganized or catatonic behavior 5. Negative symptoms (eg, apathy, flat affect) • Continuous impairment ≥6 months • Significant functional decline
Treatment	• Antipsychotic medication • Adjunctive psychosocial interventions (eg, social skills training, cognitive-behavioral therapy, family intervention)

This patient's paranoid delusions, disorganized speech and behavior, auditory hallucinations, and 1-year history of functional decline are consistent with **schizophrenia**. Symptom domains in schizophrenia include positive symptoms (eg, delusions, hallucinations, disorganization) and **negative symptoms** (eg, flat affect, apathy, poverty of speech, social withdrawal). On mental status examination, **flat affect** is manifested by a **lack of facial expression** and a **monotone voice**, typically accompanied by poor eye contact. Negative symptoms are less responsive to antipsychotic medication and typically persist between acute psychotic episodes.

Although patients with schizophrenia commonly have cognitive impairments (eg, attention, processing speed, executive functioning), they are typically oriented and do not show a fluctuating level of consciousness that is associated with delirium **(Choice C)**.

(Choices B and E) Euphoric mood and rapid, pressured speech are characteristic findings of an acute manic episode in bipolar disorder. Patients with schizophrenia may have speech that is disorganized (eg, tangential speech, derailment), but it typically is not pressured.

(Choices D and F) Although olfactory and tactile hallucinations can occur in schizophrenia, they are uncommon and more likely to be associated

	cognitive-behavioral therapy, family intervention)

This patient's paranoid delusions, disorganized speech and behavior, auditory hallucinations, and 1-year history of functional decline are consistent with **schizophrenia**. Symptom domains in schizophrenia include positive symptoms (eg, delusions, hallucinations, disorganization) and **negative symptoms** (eg, flat affect, apathy, poverty of speech, social withdrawal). On mental status examination, **flat affect** is manifested by a **lack of facial expression** and a **monotone voice**, typically accompanied by poor eye contact. Negative symptoms are less responsive to antipsychotic medication and typically persist between acute psychotic episodes.

Although patients with schizophrenia commonly have cognitive impairments (eg, attention, processing speed, executive functioning), they are typically oriented and do not show a fluctuating level of consciousness that is associated with delirium **(Choice C)**.

(Choices B and E) Euphoric mood and rapid, pressured speech are characteristic findings of an acute manic episode in bipolar disorder. Patients with schizophrenia may have speech that is disorganized (eg, tangential speech, derailment), but it typically is not pressured.

(Choices D and F) Although olfactory and tactile hallucinations can occur in schizophrenia, they are uncommon and more likely to be associated with substance use or neurological disorders. Auditory is the most common type of hallucination in schizophrenia.

Educational objective:
In addition to positive psychotic symptoms (eg, delusions, hallucinations, disorganization), patients with schizophrenia frequently exhibit negative symptoms such as flat affect (ie, lack of facial expression). Negative symptoms typically persist between acute psychotic episodes and are more resistant to treatment.

References

- Emotional face processing and flat affect in schizophrenia: functional and structural neural correlates.
- The current conceptualization of negative symptoms in schizophrenia.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Psychosis
Subject	System	Topic

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A 55-year-old man comes to the office for a checkup. His medical history is significant for major depression treated with sertraline for the past 4 months, hypertension controlled with lisinopril, and diabetes mellitus controlled with diet. He does not use tobacco and drinks a glass of wine with dinner a few times a week. Vital signs are all within normal limits, and no abnormalities are noted on physical examination. Hemoglobin A1c is within normal limits. Which of the following is the most likely side effect of the treatment prescribed for this patient's depression?

- A. Cardiac arrhythmias
- B. Hypertensive crisis
- C. Orthostatic hypotension
- D. Seizures
- E. Serotonin syndrome
- F. Sexual dysfunction
- G. Urinary hesitancy
- H. Weight gain

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A 55-year-old man comes to the office for a checkup. His medical history is significant for major depression treated with sertraline for the past 4 months, hypertension controlled with lisinopril, and diabetes mellitus controlled with diet. He does not use tobacco and drinks a glass of wine with dinner a few times a week. Vital signs are all within normal limits, and no abnormalities are noted on physical examination. Hemoglobin A1c is within normal limits. Which of the following is the most likely side effect of the treatment prescribed for this patient's depression?

A. Cardiac arrhythmias (0%)
B. Hypertensive crisis (2%)
C. Orthostatic hypotension (1%)
D. Seizures (0%)
E. Serotonin syndrome (8%)
✓ F. Sexual dysfunction (74%)
G. Urinary hesitancy (0%)
H. Weight gain (10%)

Omitted
Correct answer
F

74%
Answered correctly

02 secs
Time Spent

02/16/2020
Last Updated

Explanation

Sertraline is one of the **selective serotonin reuptake inhibitors (SSRIs)** frequently used as **first-line antidepressant** therapy. Compared with older antidepressants (eg, tricyclic antidepressants [TCAs]), SSRIs have minimal activity at alpha-adrenergic, cholinergic, and histaminic

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Explanation

Sertraline is one of the **selective serotonin reuptake inhibitors (SSRIs)** frequently used as **first-line antidepressant** therapy. Compared with older antidepressants (eg, tricyclic antidepressants [TCAs]), SSRIs have minimal activity at alpha-adrenergic, cholinergic, and histaminic receptors. They are generally more tolerable and significantly safer in overdose. However, SSRIs commonly cause **sexual dysfunction**, including decreased libido, decreased arousal, anorgasmia in women, and increased ejaculation latency in men. Sexual dysfunction can occur **in more than 50% of patients** receiving SSRIs and is a frequent cause of nonadherence. Physicians should routinely assess SSRI-treated patients for sexual dysfunction because some may be reluctant to discuss this side effect.

(Choice A) Although SSRIs can prolong the QT interval slightly, they are unlikely to cause arrhythmias when used in recommended doses in patients who lack other risk factors. Cardiac arrhythmias are a serious side effect of TCA overdose.

(Choice B) This patient's hypertension is well controlled. Hypertensive crisis is not associated with SSRIs but may occur if a patient taking a monoamine oxidase inhibitor (MAOI) ingests foods containing tyramine.

(Choices C and G) Orthostatic hypotension and urinary hesitancy are common side effects of TCAs due to their antagonism of alpha-adrenergic and cholinergic receptors. However, these side effects are rarely seen with SSRIs.

(Choices D and H) SSRIs are associated with a slightly increased risk of seizures and weight gain, but these effects are less common than sexual dysfunction. Seizures are more of a concern in patients taking TCAs and the norepinephrine-dopamine reuptake inhibitor bupropion.

(Choice E) Serotonin syndrome can occur if an SSRI is combined with another serotonergic agent, such as an MAOI, or an illicit serotonergic substance, such as MDMA. It would be uncommon in a patient taking a single serotonergic drug at a normal dosage.

Educational objective:
Selective serotonin reuptake inhibitors (SSRIs) have improved tolerability and a better side-effect profile compared with tricyclic antidepressants and monoamine oxidase inhibitors but are associated with sexual dysfunction. Physicians should routinely inquire about sexual dysfunction because it is a relatively common side effect of SSRIs that may lead to nonadherence.

References

- Sexual side-effects of antidepressant and antipsychotic drugs.
- Prevalence and impact of antidepressant-associated sexual dysfunction in three European countries: replication in a cross-sectional patient

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A 61-year old woman comes to the office due to insomnia. She has had difficulty falling asleep since her divorce was finalized 2 months ago and she relocated to a new state to be closer to her daughter and grandchildren. The patient's sleep is restless and she is frequently awakened by household noises. During this time, she has also felt anxious and tense. The patient is overwhelmed by financial worries and the responsibilities of living on her own. Although previously outgoing, she now avoids opportunities to meet new people and socializes only with her daughter. The patient has no psychiatric history but does have a history of hypothyroidism treated with levothyroxine. Physical examination is unremarkable. TSH is 1.6 μU/mL. Which of the following is the most likely diagnosis?

A. Acute stress disorder
B. Adjustment disorder
C. Anxiety disorder due to a medical condition
D. Generalized anxiety disorder
E. Medication-induced anxiety disorder
F. Normal stress response

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A. Acute stress disorder (7%)
✓ B. Adjustment disorder (63%)
C. Anxiety disorder due to a medical condition (1%)
D. Generalized anxiety disorder (7%)
E. Medication-induced anxiety disorder (1%)
F. Normal stress response (20%)

Omitted
Correct answer
B

63%
Answered correctly

02 secs
Time Spent

06/17/2020
Last Updated

Explanation

This patient developed anxiety symptoms in the setting of a recent stressor (eg, divorce and relocation); the absence of previous anxiety and brief duration make **adjustment disorder** the most appropriate diagnosis. Adjustment disorder involves emotional or behavioral symptoms (eg, anxiety, depression, disturbance of conduct) developing **within 3 months** of an **identifiable stressor** and lasting no longer than 6 months once

This patient developed anxiety symptoms in the setting of a recent stressor (eg, divorce and relocation); the absence of previous anxiety and brief duration make **adjustment disorder** the most appropriate diagnosis. Adjustment disorder involves emotional or behavioral symptoms (eg, anxiety, depression, disturbance of conduct) developing **within 3 months** of an **identifiable stressor** and lasting no longer than 6 months once the stressor or its consequences ceases. Symptoms in an adjustment disorder must be **distressing** and **impairing** (eg, this patient seeks medical attention for insomnia and is socially isolative) but are insufficient to meet full criteria for another mental disorder.

(Choice A) In acute stress disorder, the symptoms of re-experiencing (ie, intrusive memories and flashbacks), avoidance, negative mood, dissociation, and hyperarousal last from 3 days to 1 month following a life-threatening traumatic event. This patient's symptoms do not meet the criteria for this disorder, and her stressor is not life-threatening.

(Choices C and E) Although untreated thyroid conditions and excessive doses of levothyroxine may cause mood and sleep disturbance, this patient's hypothyroidism is adequately controlled, as evidenced by her normal TSH level.

(Choice D) Although anxiety, tension, and poor sleep are symptoms of generalized anxiety disorder, this diagnosis requires that symptoms last ≥6 months.

(Choice F) A normal stress response is differentiated from an adjustment disorder by milder symptoms, lack of marked distress, and lack of social or occupational impairment. This patient's significant distress and impairment make adjustment disorder the correct diagnosis.

Educational objective:
Adjustment disorder involves emotional or behavioral symptoms occurring within 3 months of an identifiable stressor. The diagnosis is indicated when the patient has significant distress and impairment but does not meet full criteria for another mental disorder.

References

- Adjustment disorders in primary care: prevalence, recognition and use of services.
- Adjustment disorder: epidemiology, diagnosis and treatment.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Adjustment disorders
Subject	System	Topic

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A 20-year-old college student comes to the office due to persistent fatigue, irregular menstrual periods, and difficulty losing weight despite intensive exercise. Several times a week, the patient has episodes where she uncontrollably consumes large amounts of cookies, bread, and potato chips. She feels disgusted with herself afterward and subsequently does additional exercise. Although the patient hates her appearance and constantly compares herself to her slimmer friends, she denies feeling persistently depressed. She has no other medical problems. Weight is 70 kg (154.3 lb) and height is 160 cm (5 ft 3 in). Blood pressure is 100/60 mm Hg and pulse is 92/min. Examination shows pharyngeal erythema and minimal parotid enlargement bilaterally. Potassium level is 3.4 mEq/L and amylase is 140 U/L. Pregnancy test is negative. Which of the following medications would be most effective in treating this patient?

A. Bupropion
B. Desipramine
C. Fluoxetine
D. Lisdexamfetamine
E. No pharmacological treatment is effective
F. Olanzapine

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A 20-year-old college student comes to the office due to persistent fatigue, irregular menstrual periods, and difficulty losing weight despite intensive exercise. Several times a week, the patient has episodes where she uncontrollably consumes large amounts of cookies, bread, and potato chips. She feels disgusted with herself afterward and subsequently does additional exercise. Although the patient hates her appearance and constantly compares herself to her slimmer friends, she denies feeling persistently depressed. She has no other medical problems. Weight is 70 kg (154.3 lb) and height is 160 cm (5 ft 3 in). Blood pressure is 100/60 mm Hg and pulse is 92/min. Examination shows pharyngeal erythema and minimal parotid enlargement bilaterally. Potassium level is 3.4 mEq/L and amylase is 140 U/L. Pregnancy test is negative. Which of the following medications would be most effective in treating this patient?

- A. Bupropion (8%)
- B. Desipramine (1%)
- ✓ C. Fluoxetine (66%)
- D. Lisdexamfetamine (5%)
- E. No pharmacological treatment is effective (14%)
- F. Olanzapine (2%)

Omitted
Correct answer
C

66%
Answered correctly

02 secs
Time Spent

02/01/2020
Last Updated

Explanation

Eating disorders

Eating disorders		
Diagnosis	**Clinical features**	**Treatment**
Anorexia nervosa	• **BMI <18.5 kg/m^2** • Intense fear of weight gain • Distorted views of body weight & shape	• Cognitive-behavioral therapy • Nutritional rehabilitation • **Olanzapine** if no response to above
Bulimia nervosa	• Recurrent episodes of binge eating • Binge eating & **inappropriate compensatory behavior** to prevent weight gain • Excess worrying about body shape & weight	• Cognitive-behavioral therapy • Nutritional rehabilitation • **SSRI (fluoxetine)**, often in combination with above
Binge-eating disorder	• Recurrent episodes of binge eating • **No inappropriate compensatory behaviors** • Lack of control during eating	• Cognitive-behavioral therapy • Behavioral weight loss therapy • SSRI • Lisdexamfetamine

SSRI = selective serotonin reuptake inhibitor.

This patient's history of recurrent binge eating followed by compensatory exercise—accompanied by physical findings and laboratory values suggestive of self-induced vomiting (pharyngeal erythema, parotid enlargement, hypokalemia and hyperamylasemia)—is consistent with **bulimia nervosa**. Other findings seen in bulimia include hypotension, tachycardia, dry skin, menstrual irregularities, erosion of dental enamel, and metabolic alkalosis.

Treatment options for bulimia nervosa include nutritional rehabilitation (establishing a structured and consistent meal pattern), cognitive-behavioral therapy, and pharmacotherapy with selective serotonin reuptake inhibitors (SSRIs). **Fluoxetine** is considered the **drug of choice** and has the best evidence of being most effective in combination with nutritional rehabilitation and psychotherapy.

(Choice A) The antidepressant bupropion is a norepinephrine dopamine reuptake inhibitor that is contraindicated in bulimia nervosa due to elevated risk of seizures.

This patient's history of recurrent binge eating followed by compensatory exercise—accompanied by physical findings and laboratory values suggestive of self-induced vomiting (pharyngeal erythema, parotid enlargement, hypokalemia and hyperamylasemia)—is consistent with **bulimia nervosa**. Other findings seen in bulimia include hypotension, tachycardia, dry skin, menstrual irregularities, erosion of dental enamel, and metabolic alkalosis.

Treatment options for bulimia nervosa include nutritional rehabilitation (establishing a structured and consistent meal pattern), cognitive-behavioral therapy, and pharmacotherapy with selective serotonin reuptake inhibitors (SSRIs). **Fluoxetine** is considered the **drug of choice** and has the best evidence of being most effective in combination with nutritional rehabilitation and psychotherapy.

(Choice A) The antidepressant bupropion is a norepinephrine dopamine reuptake inhibitor that is contraindicated in bulimia nervosa due to elevated risk of seizures.

(Choice B) Tricyclic antidepressants such as desipramine are not first-line treatment for bulimia nervosa.

(Choice D) The amphetamine lisdexamfetamine has been used to treat binge eating disorder, but not bulimia nervosa.

(Choice E) Multiple studies support the efficacy of the SSRI fluoxetine in the treatment of bulimia nervosa.

(Choice F) Olanzapine, an antipsychotic associated with weight gain, has been used in patients with anorexia nervosa who fail to gain weight with psychotherapy alone. It has no role in the treatment of bulimia nervosa.

Educational objective

Treatment options for bulimia nervosa include nutritional rehabilitation, cognitive-behavioral therapy, and pharmacotherapy with selective serotonin reuptake inhibitors. Fluoxetine is the drug of choice.

References

- Initial evaluation, diagnosis, and treatment of anorexia nervosa and bulimia nervosa.
- Psychopharmacological advances in eating disorders.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Bulimia nervosa
Subject	System	Topic

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A 4-year-old girl is sent to the emergency department from her day care center due to fever, right ear pain, and repeated vomiting. Examination shows a bulging, cloudy tympanic membrane associated with erythema, swelling, and tenderness over the right mastoid. CT scan reveals opacification of the mastoid air cells with destruction of bony septa. When the patient's parents arrive, they report that the patient has had recurrent episodes of otitis media. However, the parents decline antibiotic therapy, stating, "In our family, we believe that natural healing techniques are better than shooting up our children with chemicals." Which of the following is the most appropriate response to the parents' statement?

A. "Can you please tell me what you currently understand about your child's infection?"

B. "Help me understand what natural treatments you are willing to allow."

C. "I understand your concerns about medication side effects, but antibiotic treatment is necessary."

D. "If we don't give your child antibiotics, she could get a brain abscess and die."

E. "We can try natural techniques briefly, but if she doesn't get better, we will have to use antibiotics."

Submit

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- ✓ A. "Can you please tell me what you currently understand about your child's infection?" (58%)
- B. "Help me understand what natural treatments you are willing to allow." (17%)
- C. "I understand your concerns about medication side effects, but antibiotic treatment is necessary." (18%)
- D. "If we don't give your child antibiotics, she could get a brain abscess and die." (2%)
- E. "We can try natural techniques briefly, but if she doesn't get better, we will have to use antibiotics." (2%)

Omitted
Correct answer
A

58%
Answered correctly

03 secs
Time Spent

03/31/2020
Last Updated

Explanation

Approach to treatment refusal	
Determine legal decision-maker	• Self: legal/competent adult or emancipated minor • Surrogate decision-maker: parent/guardian, specified proxy, default surrogate (eg, spouse, adult

Approach to treatment refusal	
Determine legal decision-maker	• Self: legal/competent adult or emancipated minor • Surrogate decision-maker: parent/guardian, specified proxy, default surrogate (eg, spouse, adult child)
Counseling of decision-maker	• Assess level of understanding, health literacy • Explain natural history of disease, pros & cons of treatment options
Continued refusal	For life-sustaining treatment: • Engage care team, social services • Consult facility ethics committee • Initiate legal action for court order If immediate care needed (eg, life- or limb-threatening condition): • Provider should administer care over surrogate refusal

This child with a history of recurrent otitis media now has acute mastoiditis, a purulent infection of the mastoid air cells. **Untreated mastoiditis** can lead to serious complications, including **brain abscess and death**, and requires aggressive management. Initial treatment includes parenteral antibiotics, and patients often require surgical intervention.

Patients and surrogate decision-makers (eg, parents, guardians) often have limited understanding of serious but uncommon conditions, such as mastoiditis. They also may have misconceptions regarding the potential risks and benefits of medical treatment. Decision-making can be further complicated by the urgency to make life-or-death decisions quickly in unfamiliar environments (eg, emergency department).

The initial step in counseling patients and surrogate decision-makers regarding **refusal of treatment** is to calmly probe their **understanding of the disease process**. This can be followed by **counseling and education** tailored to the decision-maker's **level of understanding and health literacy** and an objective assessment of treatment options. Although a court order may be necessary to compel the parents to allow life-saving treatment, legal action can be distressing to all involved. Often, once the disease process and treatment options are better understood, decision-makers become less resistant to treatment.

mastoiditis. They also may have misconceptions regarding the potential risks and benefits of medical treatment. Decision-making can be further complicated by the urgency to make life-or-death decisions quickly in unfamiliar environments (eg, emergency department).

The initial step in counseling patients and surrogate decision-makers regarding **refusal of treatment** is to calmly probe their **understanding of the disease process**. This can be followed by **counseling and education** tailored to the decision-maker's **level of understanding and health literacy** and an objective assessment of treatment options. Although a court order may be necessary to compel the parents to allow life-saving treatment, legal action can be distressing to all involved. Often, once the disease process and treatment options are better understood, decision-makers become less resistant to treatment.

(Choice B) For non–life-threatening conditions for which standard therapies are undesirable or ineffective, clinicians can lend their expertise to patients regarding nonstandard therapies, even if the clinician does not fully endorse such therapies. However, there are no nonpharmacologic therapies that are adequate for treating mastoiditis.

(Choice C) This statement begins with an appropriate gesture of concern. However, it is inadequate because it simply reiterates treatment recommendations and does not attempt to provide the information needed for the patient's parents to make an informed decision.

(Choice D) Although discussion with this child's family should include the risks of untreated mastoiditis, presenting scare tactics and worst-case scenarios is likely only to further distress the family and inhibit rational decision-making.

(Choice E) Delayed treatment of mastoiditis is not recommended. Wasting time with ineffective treatments will only delay having a more appropriate conversation.

Educational objective:
Patients and surrogate decision-makers often have misconceptions regarding medical conditions and the potential risks and benefits of treatment. The initial step in counseling patients and surrogate decision-makers regarding treatment refusal is to calmly probe their understanding of the disease process. This can be followed by counseling and education tailored to the decision-maker's level of understanding and health literacy.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Informed consent
Subject	System	Topic

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A 27-year-old woman comes to the office due to concerns about her weight. She is frustrated about gaining a few pounds, although she maintains a well-balanced diet and exercises for an hour 3 times a week. The patient has been worried for years that her thighs are "huge" and "covered in cellulite." She always wears loose-fitting pants and spends hours a day researching leg exercises and measuring the circumference of her thighs. The patient generally stays at home and avoids social activities as she feels people tend to stare at her. She weighs 58 kg (127.9 lb) and is 170 cm (5 ft 7 in) tall. Physical examination is normal. Which of the following is the most likely diagnosis?

A. Agoraphobia
B. Anorexia nervosa
C. Avoidant personality disorder
D. Body dysmorphic disorder
E. Bulimia nervosa
F. Delusional disorder
G. Obsessive-compulsive disorder
H. Social anxiety disorder

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- A. Agoraphobia (0%)
- B. Anorexia nervosa (2%)
- C. Avoidant personality disorder (0%)
- ✓ D. Body dysmorphic disorder (93%)
- E. Bulimia nervosa (1%)
- F. Delusional disorder (0%)
- G. Obsessive-compulsive disorder (1%)
- H. Social anxiety disorder (0%)

Omitted
Correct answer
D

93%
Answered correctly

03 secs
Time Spent

06/05/2020
Last Updated

Explanation

Body dysmorphic disorder	
Clinical features	• Preoccupation with ≥1 perceived physical defects • Defects not observable or appear slight to others • Repetitive behavior or mental acts performed in response to the preoccupation • Significant distress or impairment
Differential diagnosis	• Delusional disorder (fixed, false beliefs unrelated to appearance) • Eating disorders (distorted body image & concerns focused on weight) • Obsessive-compulsive disorder (nonappearance-related obsessions & compulsions)

Body dysmorphic disorder (BDD) involves a **fixation** with a **perceived defect** in **appearance** that is not evident or appears slight to others. Patients may believe that they look ugly or hideous due to their appearance concerns, which results in the performance of **repetitive behaviors** (eg, excessive mirror checking, grooming) or mental acts (eg, comparison with others).

The disorder causes significant distress and/or psychosocial impairment, often resulting in unnecessary plastic surgery, avoidance behavior, and interpersonal problems. Patient insight ranges from good to absent (absolute conviction that beliefs about their appearance are true).

(Choice A) Avoidance of public areas is present in both agoraphobia and BDD; however, in agoraphobia, avoidance is motivated by thoughts about not being able to escape if a panic attack were to occur as opposed to concerns about appearance.

(Choices B and E) Weight concerns may occur in both body dysmorphic and eating disorders. However, this patient does not meet diagnostic criteria for either anorexia or bulimia nervosa (eg, normal weight, no evidence of binges or inappropriate compensatory behaviors).

(Choices C and H) Although patients with BDD are frequently socially anxious and avoidant, the feelings result from their distorted beliefs about their appearance. In avoidant personality disorder and social anxiety disorder, social avoidance is related to fears of rejection and criticism from others.

(Choice F) Patients with BDD can have delusional beliefs about their appearance, with a firm conviction that their perception is accurate. However, this is diagnosed as BDD with absent insight, rather than delusional disorder, because it involves only fixed, false beliefs about

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(Choice F) Patients with BDD can have delusional beliefs about their appearance, with a firm conviction that their perception is accurate. However, this is diagnosed as BDD with absent insight, rather than delusional disorder, because it involves only fixed, false beliefs about appearance.

(Choice G) Obsessive-compulsive disorder is characterized by intrusive obsessions and/or time-consuming compulsions. When obsessions and compulsions are limited to concerns about physical appearance, BDD is the appropriate diagnosis.

Educational objective:
Body dysmorphic disorder involves fixation on a perceived defect in appearance and repetitive behaviors in response to the fixation. It can present with absent insight/delusional beliefs and result in significant psychosocial dysfunction.

References

- A review of body dysmorphic disorder and its presentation in different clinical settings.
- Body dysmorphic disorder.

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A 24-year-old woman calls her obstetrician after giving birth to a healthy boy 5 days earlier. She reports feeling depressed and irritable: "I thought I would be thrilled to have a baby, but then I felt really disappointed it was not a girl and find myself crying constantly." The patient gets help from her sister during the day but is exhausted due to getting up at night to feed the baby. She says, "My sister is so helpful, but I can't help snapping at her for no reason. I get so worried that I won't be a decent mother." The patient has no medical or psychiatric history, and the pregnancy and delivery were unremarkable. She has no suicidal ideation or thoughts of harming the baby. In addition to providing support, which of the following is the most appropriate response to the patient?

A. I am concerned that your depression may interfere with your ability to care for your baby right now.

B. I would like you to see a counselor for further evaluation of your mood.

C. Mood changes are normal after giving birth; we can follow up at your 6-week postpartum checkup.

D. Postpartum mood changes are common; please call me if you do not start to improve within the next week.

E. We should consider starting an antidepressant for postpartum depression.

Submit

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A. I am concerned that your depression may interfere with your ability to care for your baby right now. (1%)

B. I would like you to see a counselor for further evaluation of your mood. (3%)

C. Mood changes are normal after giving birth; we can follow up at your 6-week postpartum checkup. (15%)

✓ D. Postpartum mood changes are common; please call me if you do not start to improve within the next week. (78%)

E. We should consider starting an antidepressant for postpartum depression. (2%)

Omitted
Correct answer
D

78%
Answered correctly

02 secs
Time Spent

01/31/2020
Last Updated

Explanation

Postpartum blues, depression & psychosis			
	Postpartum blues	Postpartum depression	Postpartum psychosis

Postpartum blues, depression & psychosis			
	Postpartum blues	**Postpartum depression**	**Postpartum psychosis**
Prevalence	40%-80%	8%-15%	0.1%-0.2%
Onset	2-3 days (resolves within 14 days)	Typically within 4-6 weeks (can be up to 1 year)	Variable: Days to weeks
Symptoms	Mild depression, tearfulness, irritability	≥2 weeks of moderate to severe depression, sleep or appetite disturbance, low energy, psychomotor changes, guilt, concentration difficulty, suicidal ideation	Delusions, hallucinations, thought disorganization, bizarre behavior
Management	Reassurance & monitoring	Antidepressants, psychotherapy	Antipsychotics, antidepressants, mood stabilizers; hospitalization (do not leave mother alone with infant due to risk of infanticide)

This patient most likely has **postpartum blues**, a normal, **self-limiting condition** that occurs within a few days postpartum. Symptoms include mild depressive symptoms (eg, sadness, insomnia, tearfulness, irritability, anxiety, impaired concentration). These symptoms typically **peak at 5 days** and **resolve within 14 days**.

The most appropriate response would be to reassure the patient that postpartum mood changes are common and to monitor her closely with instructions to call back if she does not start to improve. If symptoms do not remit spontaneously by day 14, a follow-up should be scheduled.

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The most appropriate response would be to reassure the patient that postpartum mood changes are common and to monitor her closely with instructions to call back if she does not start to improve. If symptoms do not remit spontaneously by day 14, a follow-up should be scheduled. Waiting until the 6-week postpartum check would be inadequate as women with postpartum blues are at increased risk of developing postpartum depression, which typically presents within 4-6 weeks of delivery **(Choice C)**. The much rarer postpartum psychosis can present with delusions and command hallucinations to kill the infant and represents a psychiatric emergency.

(Choice A) There is no evidence that the patient is unable to care for the infant, and this statement is likely to be perceived as critical. Asking the patient whether she has any concerns about caring for her infant or needs extra support would be more appropriate.

(Choices B and E) Because this patient is calling on day 5 (often the peak of postpartum blues), it would be premature to refer her to a counselor or to diagnose or treat postpartum depression. Postpartum blues is self-limiting and resolves without treatment.

Educational objective:
Postpartum mood disturbances include postpartum blues, postpartum depression, and, rarely, postpartum psychosis. The most common disturbance, postpartum blues, is a benign, self-limited condition that begins several days postpartum and resolves within 14 days without intervention.

References

- Postpartum psychiatric disorders: early diagnosis and management.
- Concise review for physicians and other clinicians: postpartum depression.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Depression
Subject	System	Topic

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A 13-month-old girl is brought to the office by her mother. She is worried that there is something wrong and explains, "My daughter used to sit on her own and loved babbling and clapping her hands. She still plays with her sisters and likes snuggles, but for the past 3 months she hasn't babbled as much, and can no longer sit without my help. She twists her hands together and I cannot get her to stop. I am worried that the skin on her hands is getting red, dry, and painful." Weight and height are in the 60th percentile. The patient's head growth, however, has decreased from the 50th to the 40th percentile in 3 months. On examination, the child is globally hypotonic and unable to sit upright without being held. She makes no sound apart from an occasional grunt. She shows interest in toys the doctor provides her but does not reach out for them, wringing her hands repeatedly. Which of the following best explains this patient's condition?

A. Angelman syndrome
B. Autism spectrum disorder
C. Fragile X syndrome
D. Lesch-Nyhan syndrome
E. Rett syndrome
F. Tay-Sachs disease

Submit

A 13-month-old girl is brought to the office by her mother. She is worried that there is something wrong and explains, "My daughter used to sit on her own and loved babbling and clapping her hands. She still plays with her sisters and likes snuggles, but for the past 3 months she hasn't babbled as much, and can no longer sit without my help. She twists her hands together and I cannot get her to stop. I am worried that the skin on her hands is getting red, dry, and painful." Weight and height are in the 60th percentile. The patient's head growth, however, has decreased from the 50th to the 40th percentile in 3 months. On examination, the child is globally hypotonic and unable to sit upright without being held. She makes no sound apart from an occasional grunt. She shows interest in toys the doctor provides her but does not reach out for them, wringing her hands repeatedly. Which of the following best explains this patient's condition?

- A. Angelman syndrome (5%)
- B. Autism spectrum disorder (6%)
- C. Fragile X syndrome (2%)
- D. Lesch-Nyhan syndrome (9%)
- ✓ E. Rett syndrome (69%)
- F. Tay-Sachs disease (6%)

Omitted
Correct answer
E

69%
Answered correctly

02 secs
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02/23/2020
Last Updated

Explanation

This patient's normal development through age 10 months followed by regression (eg, loss of babbling and motor control) and development of hand wringing is characteristic of **Rett syndrome**, a neurodevelopmental disorder that occurs mainly in girls. Most cases are due to de novo

Explanation

This patient's normal development through age 10 months followed by regression (eg, loss of babbling and motor control) and development of hand wringing is characteristic of **Rett syndrome**, a neurodevelopmental disorder that occurs mainly in girls. Most cases are due to de novo mutations in the X-linked *MECP2* gene. Rett syndrome is characterized by normal development until **age 6-18 months**, followed by a **loss of motor and language skills** and the development of **stereotypic hand movements**. **Deceleration of head growth** is a classic feature of Rett syndrome and can be an early sign. Other features include seizures, intellectual disability, autistic features, and breathing abnormalities.

There is no specific therapy for Rett syndrome; many patients survive well into adulthood with severe, permanent neurologic deficits.

(Choice A) Features of Angelman syndrome include a happy disposition, jerky gait, and hand flapping. Development is commonly delayed rather than initially normal.

(Choice B) Although this patient has deficits in verbal communication and stereotypical hand movements, she does not display other features of autism spectrum disorder (ASD) such as deficits in social reciprocity, emotional restriction, or repetitive interests. She plays and snuggles with family and appears to be trying to interact with the doctor.

(Choice C) Fragile X syndrome mainly affects males and is associated with CGG trinucleotide repeats on the X chromosome. Features include intellectual disability; a long, narrow face; large protruding ears; macrocephaly; and macroorchidism.

(Choice D) Lesch-Nyhan syndrome is an X-linked recessive disorder characterized by a deficiency in HGPRT (hypoxanthine guanine phosphoribosyltransferase), leading to an increase in uric acid levels. Although hypotonia and involuntary movements such as hand wringing may be present, developmental milestones are typically delayed rather than normal. Gout and self-mutilating behaviors (eg, lip and finger biting) are commonly seen.

(Choice F) Tay-Sachs disease is a lysosomal storage disease caused by a deficiency in beta-hexosaminidase A (Hex A). Like Rett syndrome, it presents with a regression of motor skills, but it typically begins earlier (age 2-6 months) and is associated with macrocephaly and a cherry red spot on the macula.

Educational objective:
Rett syndrome is characterized by loss of speech and motor skills, deceleration of head growth, and stereotypic purposeless hand movements after a period of normal development. It affects mainly girls and is associated with mutations in the *MECP2* gene.

(Choice A) Features of Angelman syndrome include a happy disposition, jerky gait, and hand flapping. Development is commonly delayed rather than initially normal.

(Choice B) Although this patient has deficits in verbal communication and stereotypical hand movements, she does not display other features of autism spectrum disorder (ASD) such as deficits in social reciprocity, emotional restriction, or repetitive interests. She plays and snuggles with family and appears to be trying to interact with the doctor.

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Educational objective:
Rett syndrome is characterized by loss of speech and motor skills, deceleration of head growth, and stereotypic purposeless hand movements after a period of normal development. It affects mainly girls and is associated with mutations in the *MECP2* gene.

References

- Is it possible to diagnose Rett syndrome before classical symptoms become obvious? Review of 24 Danish cases born between 2003 and 2012.
- Rett syndrome: disruption of epigenetic control of postnatal neurological functions.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Rett syndrome
Subject	System	Topic

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A 2-year-old boy is brought to the clinic by his mother, who is concerned about his language development. She says, "I know that children speak at different ages and he is still young, but I am concerned that his speech isn't progressing and that he needs to interact with other children more. His day care teacher says that he is shy and sits in a corner playing with his favorite truck. We have also been busy with a recent move and have not given him as much attention, which doesn't help." The patient's birth history, medical history, and audiology screening are unremarkable. His mother is 6 months pregnant with her second child, and the family moved to a new home 3 months ago. In the examination room, the patient sits in a corner, avoiding eye contact with the doctor and repeatedly spinning the wheels of a toy truck. He does not respond to his name. He makes occasional grunting sounds but says no fully formed words. When his mother tries to take his truck away, he begins screaming and pulls it back. Which of the following is the most likely diagnosis in this patient?

A. Adjustment disorder
B. Autism spectrum disorder
C. Language disorder
D. Normal variation in development
E. Selective mutism
F. Social anxiety disorder
G. Social (pragmatic) communication disorder

Submit

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- A. Adjustment disorder (8%)
- ✓ B. Autism spectrum disorder (80%)
- C. Language disorder (2%)
- D. Normal variation in development (3%)
- E. Selective mutism (3%)
- F. Social anxiety disorder (0%)
- G. Social (pragmatic) communication disorder (1%)

Omitted
Correct answer
B

80%
Answered correctly

02 secs
Time Spent

06/05/2020
Last Updated

Explanation

Autism spectrum disorder	
Clinical features	• Deficits in social communication & interactions with onset in early development ◦ Sharing of emotions or interests ◦ Nonverbal communication ◦ Developing & understanding relationships • Restricted, repetitive patterns of behavior ◦ Repetitive movements or speech ◦ Insistence on sameness/routines ◦ Intense fixated interests ◦ Adverse responses to sensory input • May occur with or without language & intellectual impairment
Assessment & management principles	• Early diagnosis & intervention • Comprehensive, multimodal treatment (speech, behavioral therapy, educational services) • Adjunctive pharmacotherapy for psychiatric comorbidities

This child's **lack of social engagement**, speech delay, and **repetitive play** are consistent with **autism spectrum disorder** (ASD). ASD is more common in boys.

Deficits often become apparent by the **second year of life**, with the diagnosis typically made before age 5. In higher-functioning cases, ASD may be diagnosed later, when social expectations increase and deficits become more noticeable.

ASD can occur with varying degrees of **language and intellectual impairment**. Language deficits can range from odd, stilted speech to delayed or complete lack of intelligible speech. Other features of ASD include impaired joint attention (eg, lack of pointing or bringing objects to others), **motor stereotypies** (eg, hand flapping, spinning), and hyperreactivity or hyporeactivity to sensory input (eg, extreme responses to sounds or textures, indifference to pain).

(Choice A) Adjustment disorders are diagnosed when symptoms develop within 3 months of an identifiable stressor. Although the mother's pregnancy and family's move to a new home may be stressful for the boy, it would not explain his lack of language acquisition, poor social interaction, and repetitive play.

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	• Adjunctive pharmacotherapy for psychiatric comorbidities

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(Choice C) Language impairment frequently accompanies ASD. However, an isolated language disorder would not explain this child's lack of social interaction and restricted interests.

(Choice D) At age 2, children should be saying 2- or 3-word phrases, engaging in parallel play using a variety of toys, making eye contact, and responding to their names.

(Choice E) Selective mutism involves a failure to speak in specific situations (eg, school) despite speaking in other settings. This boy's language impairment in all settings, deficits in social reciprocity, and restricted and repetitive behaviors are characteristic of ASD.

(Choice F) In social anxiety disorder, children may have difficulty engaging with others due to anxiety in new social circumstances but otherwise have normal communication skills. This child's deficits are evident in multiple domains (home, school, office).

(Choice G) Social (pragmatic) communication disorder is characterized by deficits in verbal and nonverbal communication for the purposes of social interaction. If these deficits are accompanied by restricted patterns of behavior, such as in this child, the appropriate diagnosis is ASD.

Educational objective:
Autism spectrum disorder is characterized by impaired social communication/interactions and restricted, repetitive interests or behaviors. It can

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Autism spectrum disorder is characterized by impaired social communication/interactions and restricted, repetitive interests or behaviors. It can occur with or without language and intellectual impairment.

References

- Autism spectrum disorders.
- Social (pragmatic) communication disorders and autism spectrum disorder.
- Autistic spectrum disorders: a review of clinical features, theories and diagnosis.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Autism spectrum disorders
Subject	System	Topic

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A 26-year-old woman is found unresponsive and not breathing on the bedroom floor by her father. Despite resuscitation efforts, she is pronounced dead in the emergency department. The woman had recently returned home after an unsuccessful attempt to live independently and maintain employment as a waitress. She completed a substance use residential treatment program 6 months ago. Her father says, "I know she drank and used a lot of different drugs over the years, but she seemed less depressed and I had hoped things were finally turning around for her." According to epidemiological data, accidental or intentional ingestion of which of the following drug classes is the most likely cause of overdose death in this patient?

A. Alcohol
B. Antidepressants
C. Benzodiazepines
D. Opioids
E. Over-the-counter pain medications
F. Stimulants

Submit

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A. Alcohol (3%)
B. Antidepressants (9%)
C. Benzodiazepines (11%)
✓ D. Opioids (61%)
E. Over-the-counter pain medications (10%)
F. Stimulants (2%)

Omitted
Correct answer
D

61%
Answered correctly

02 secs
Time Spent

02/22/2020
Last Updated

Explanation

Although an overdose of any of these substances could result in death, research indicates that the **majority** of **overdose deaths** in the United States are related to **opioids**, either in isolation or with co-ingestants. The abuse of and addiction to opioids, including **both prescription pain medications** and **heroin**, is a growing public health problem.

Although an overdose of any of these substances could result in death, research indicates that the **majority** of **overdose deaths** in the United States are related to **opioids**, either in isolation or with co-ingestants. The abuse of and addiction to opioids, including **both prescription pain medications** and **heroin**, is a growing public health problem.

To address the prescription opioid epidemic, many states have enacted prescription monitoring programs. However, there is also growing evidence to suggest that patients who abuse prescription opioids are increasingly transitioning to heroin as it is cheaper and easier to obtain in some communities. The risks of heroin abuse are compounded by the lack of control over purity and possible contamination with other drugs. Heroin abuse is no longer restricted to urban areas but has now spread to small towns and suburbs.

(Choice A) Alcohol poisoning is a less common cause of death compared to opioids.

(Choice B) Many patients in the United States take antidepressants, the most commonly prescribed of which are selective serotonin reuptake inhibitors or serotonin-norepinephrine reuptake inhibitors. These drugs are much less lethal in overdose than tricyclic antidepressants, which can cause significant cardiac and central nervous system toxicity in overdose. Opioids have a higher overdose death rate than antidepressants in general.

(Choice C) Benzodiazepine overdose is rarely fatal with isolated oral ingestion as it causes less respiratory depression as compared with opioids.

(Choice E) Acetaminophen toxicity has been associated with acute hepatic failure, and nonsteroidal agents have been associated with metabolic acidosis and renal failure. However, death from overdose of these medications is less common in comparison with opioids.

(Choice F) Stimulant overdose is potentially life-threatening and causes psychomotor agitation, hypertension, and coronary vasoconstriction; however, fatal opioid overdose is more common.

Educational objective:
In the United States, the majority of overdose deaths are caused by opioids, including prescription analgesics and heroin.

References

- The epidemic of prescription opioid abuse, the subsequent rising prevalence of heroin use, and the federal response.
- The changing face of heroin use in the United States: a retrospective analysis of the past 50 years.
- Increases in drug and opioid overdose deaths--United States, 2000-2014.

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Behavioral science	Psychiatric/Behavioral & Substance Abuse	Opioids
Subject	System	Topic

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A 17-year-old girl is brought to the office by her parents due to recurrent episodes where "she seems to be lost in her own world." The parents say that the episodes began about 2 years ago, but seem to be occurring more frequently since a difficult breakup with her boyfriend several months ago. The patient acknowledges that she seems to "space out" easily. She says, "I often feel numb, like I'm in a fog or a dream. Sometimes, I feel as if I'm not myself, as if things are happening to someone else." The patient uses nonsteroidal anti-inflammatory drugs for menstrual cramps. She has no other medical conditions. She smokes cigarettes but does not use alcohol or illicit drugs. Physical and neurologic examinations are normal. On mental status examination, the patient is cooperative with a mildly anxious mood and flat affect. Which of the following is the most likely diagnosis?

A. Absence seizures
B. Brief psychotic disorder
C. Depersonalization/derealization disorder
D. Dissociative amnesia
E. Dissociative identity disorder
F. Post-traumatic stress disorder

Submit

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- A. Absence seizures (4%)
- B. Brief psychotic disorder (0%)
- ✓ C. Depersonalization/derealization disorder (86%)
- D. Dissociative amnesia (1%)
- E. Dissociative identity disorder (6%)
- F. Post-traumatic stress disorder (0%)

Omitted
Correct answer
C

86%
Answered correctly

02 secs
Time Spent

02/23/2020
Last Updated

Explanation

Dissociative disorders

Dissociative disorders	
Depersonalization/derealization disorder	• 1 or both: ◦ Depersonalization (detachment, unreality of self) ◦ Derealization (detachment, unreality of surroundings)
Dissociative amnesia	• Inability to recall personal information, usually of a traumatic or stressful nature
Dissociative identity disorder	• Fragmentation into ≥2 distinct personalities • Discontinuity in identity & personal agency

Although transient experiences of depersonalization and derealization are common in the general population, this patient's persistent and recurrent episodes are consistent with **depersonalization/derealization disorder**. It is classified as one of the dissociative disorders and should be differentiated from dissociative amnesia and dissociative identity disorder.

Episodes of **depersonalization** are characterized by a feeling of **detachment** or estrangement **from the self** or a sense of being an outside observer of the self. **Derealization** is a subjective sense of **detachment** or unreality regarding **surroundings**. In contrast to psychotic disorders, reality testing is intact during these unusual experiences (ie, individuals may feel detached from their bodies but know this is not true).

(Choice A) Absence seizures typically begin in childhood and are frequently associated with staring, repetitive eyelid movements, automatisms, and lack of awareness of the episodes.

(Choice B) This patient's intact reality testing and absence of psychotic symptoms (eg, delusions, hallucinations, disorganized speech and behavior) make brief psychotic disorder unlikely.

(Choices D and E) Dissociative amnesia involves gaps in autobiographical memory, usually associated with a traumatic event. Dissociative identity disorder is a rare condition associated with severe trauma that involves fragmentation of identity into ≥2 distinct personality states.

(Choice F) Depersonalization/derealization is not diagnosed as a separate disorder when it occurs as a feature of post-traumatic stress disorder (PTSD). However, this patient does not meet other criteria for PTSD: exposure to life-threatening trauma, intrusion (eg, nightmares, flashbacks), avoidance of reminders, and hyperarousal (eg, insomnia, hypervigilance).

Educational objective:

be differentiated from dissociative amnesia and dissociative identity disorder.

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Educational objective:
Depersonalization/derealization disorder is a dissociative disorder involving recurrent episodes of feeling detached from one's body or surroundings and/or feelings of unreality.

References

- Dissociative disorders in DSM-5.
- Dissociative disorders in medical settings.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Depersonalization disorder
Subject	System	Topic

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A 14-year-old boy is brought to the emergency department by a teacher after being found staggering and falling on the ground in the school parking lot between classes. When she found him, the patient seemed lethargic and disoriented and his speech was slurred. His condition slowly improved over the next 30 minutes; when the patient is evaluated in the emergency department an hour after the teacher found him, he is alert, oriented, and able to speak clearly. Temperature is 36.7 C (98.1 F), blood pressure is 102/65 mm Hg, and pulse is 62/min. On physical examination, there are abrasions on the right forearm and shin and a rash around the nostrils and mouth. The patient has no known medical history. Which of the following substances is the most likely cause of this patient's symptoms?

- A. Alcohol
- B. Benzodiazepines
- C. Cocaine
- D. Inhalants
- E. Opiates
- F. Phencyclidine

Submit

A 14-year-old boy is brought to the emergency department by a teacher after being found staggering and falling on the ground in the school parking lot between classes. When she found him, the patient seemed lethargic and disoriented and his speech was slurred. His condition slowly improved over the next 30 minutes; when the patient is evaluated in the emergency department an hour after the teacher found him, he is alert, oriented, and able to speak clearly. Temperature is 36.7 C (98.1 F), blood pressure is 102/65 mm Hg, and pulse is 62/min. On physical examination, there are abrasions on the right forearm and shin and a rash around the nostrils and mouth. The patient has no known medical history. Which of the following substances is the most likely cause of this patient's symptoms?

A. Alcohol (9%)
B. Benzodiazepines (4%)
C. Cocaine (10%)
✓ D. Inhalants (67%)
E. Opiates (5%)
F. Phencyclidine (3%)

Omitted
Correct answer
D

67%
Answered correctly

02 secs
Time Spent

02/14/2020
Last Updated

Explanation

This patient's initial symptoms (eg, lethargy, ataxia, disorientation, slurred speech) followed by **rapid improvement** and a **perioral and perinasal rash** on examination are most likely due to **inhalant use disorder**. Inhalants, in the form of glue, toluene, nitrous oxide, amyl nitrite, and spray paints, are often the first drugs that adolescents misuse as they are inexpensive and readily available. They may be inhaled from a saturated cloth

Explanation

This patient's initial symptoms (eg, lethargy, ataxia, disorientation, slurred speech) followed by **rapid improvement** and a **perioral and perinasal rash** on examination are most likely due to **inhalant use disorder**. Inhalants, in the form of glue, toluene, nitrous oxide, amyl nitrite, and spray paints, are often the first drugs that adolescents misuse as they are inexpensive and readily available. They may be inhaled from a saturated cloth held near the face, from a bag placed over the nose and mouth, or by sniffing directly. A dermatitis known as "glue sniffer's rash" may be seen around the mouth or nostrils of chronic users.

Inhalants cause **immediate effects** as they are highly lipid soluble and act as CNS depressants. They can produce brief **transient euphoria**, **lethargy**, disorientation, loss of consciousness, **poor coordination**, and **slurred speech**. Effects typically last 15-45 minutes. Severe complications include cardiac dysrhythmias, dangerous behavior, seizures, and death. Nitrous oxide misuse in particular is associated with vitamin B_{12} deficiency and resultant symptoms of polyneuropathy (eg, symmetric numbness, gait abnormalities).

(Choices A and B) Although alcohol and benzodiazepine use can cause similar mental status changes, this patient's rapid improvement and facial rash are more consistent with inhalant use disorder. Alcohol and benzodiazepine intoxication would likely result in a significantly longer period of intoxication.

(Choice C) Cocaine is a CNS stimulant that typically produces euphoria, increased arousal, psychomotor agitation, tachycardia, and hypertension. It would not explain this patient's lethargy and ataxia.

(Choice E) Classic signs of opioid intoxication include depressed mental status, respiratory depression, and miosis. The time course of symptoms and facial rash make inhalant use disorder a better explanation for this patient's symptoms.

(Choice F) Phencyclidine (ie, PCP) intoxication is characterized by nystagmus, altered mental status, and agitated or violent behavior.

Educational objective:
Inhalant intoxication is characterized by immediate onset of euphoria, lethargy, ataxia, and/or loss of consciousness followed by rapid recovery within 45 minutes. Perioral and perinasal dermatitis (ie, "glue sniffer's rash") may be seen in chronic users.

References

- Inhalant abuse and dextromethorphan.

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References

- Inhalant abuse and dextromethorphan.
- Adolescent inhalant use prevention, assessment, and treatment: a literature synthesis.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Inhalants
Subject	System	Topic

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A 3-year-old boy is brought to the office by his parents due to behavioral difficulties. His mother says, "He is physically healthy and affectionate but has become more defiant and often resists our instructions about getting ready for bed. He plays roughly with his 6-year-old brother and throws tantrums when he has to share his toys or put them away." His preschool teacher describes him as an "active child" who sometimes talks out loud to classmates while the teacher is speaking. He is easily distracted and often gets up to walk around the classroom. The patient is able to draw circles, speak 3-word sentences, go up stairs with alternating feet, and use the toilet but cannot wipe himself. His parents express concern about his inability to dress himself and about his bed-wetting that occurs approximately twice a week. Physical examination is unremarkable. Which of the following is the most likely explanation for the child's behavior?

A. Attention-deficit hyperactivity disorder
B. Conduct disorder
C. Developmental delay
D. Disruptive mood dysregulation disorder
E. Normal development
F. Oppositional defiant disorder

Submit

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- A. Attention-deficit hyperactivity disorder (22%)
- B. Conduct disorder (2%)
- C. Developmental delay (5%)
- D. Disruptive mood dysregulation disorder (4%)
- ✓ E. Normal development (57%)
- F. Oppositional defiant disorder (8%)

Omitted
Correct answer
E

57%
Answered correctly

03 secs
Time Spent

07/03/2020
Last Updated

Explanation

This boy's behavior is most consistent with age-appropriate behavior. His motor, language, and social skills are within normal range for a 3-year-old. A short attention span, increased motor activity (eg, difficulty staying seated), occasional impulsivity (eg, speaking out of turn, tantrums when

Explanation

This boy's behavior is most consistent with age-appropriate behavior. His motor, language, and social skills are within normal range for a 3-year-old. A short attention span, increased motor activity (eg, difficulty staying seated), occasional impulsivity (eg, speaking out of turn, tantrums when toys are taken), and oppositional behavior at bedtime are consistent with **normal developmental variation** in **young children**.

Due to the overlap of normal behavior in preschoolers and symptoms of attention-deficit hyperactivity disorder (**ADHD**), this **diagnosis** is **not** given **before age 4-5 (Choice A)**. If symptoms of inattentiveness, hyperactivity, and impulsivity continue and persist through kindergarten and cause impairment in at least 2 settings (eg, school and home), then further evaluation for ADHD and other behavioral disorders is appropriate.

(Choices B and F) In conduct disorder, the basic rights of others or major societal norms are violated (not seen in this patient). This boy's oppositional behavior at bedtime and fighting with his sibling are common at his age. Assisting parents to set consistent limits with age-appropriate consequences can be helpful in managing this behavior. The diagnosis of oppositional defiant disorder is reserved for children and adolescents with a persistent pattern of irritability, defiance, and vindictiveness.

(Choice C) This patient's developmental milestones are on track. Children are not expected to fully dress themselves or achieve nocturnal urinary continence until approximately age 5.

(Choice D) Disruptive mood dysregulation disorder is characterized by a persistently irritable or angry mood and temper tantrums that are inconsistent with developmental level.

Educational objective:
Short attention span and varying degrees of hyperactivity and impulsivity are commonly seen in children under age 4. Attention-deficit hyperactivity disorder should not be diagnosed until age 4-5.

References

- Misdiagnosis of attention deficit hyperactivity disorder: 'Normal behaviour' and relative maturity.
- Diagnosis and management of ADHD in children.
- Relative age within the school year and diagnosis of attention-deficit hyperactivity disorder: a nationwide population-based study.

Explanation

This boy's behavior is mos ... ar-
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Due to the overlap of norm
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Educational objective:
Short attention span and
hyperactivity disorder sho

References

- Misdiagnosis of attent
- Diagnosis and manag
- Relative age within the

Exhibit Display

Developmental milestones of preschoolers

Age (years)	Gross motor	Fine motor	Language	Social/ cognitive
3	• Walks up stairs with alternating feet • Pedals a tricycle • Jumps forward	• Draws a circle • Feeds self without help • Grips a crayon with fingers instead of fist	• Says 3- or 4-word sentences • Asks "why" questions • States own age	• Begins associative play • Has been toilet trained, except wiping
4	• Walks down stairs with alternating feet • Balances on 1 foot • Catches a ball	• Draws a square • Cuts with scissors • Ties a simple knot	• Names ≥2 colors • Likes telling stories	• Begins imaginative/ group play • Recognizes analogies • Often focuses on self
5	• Skips • Walks backward • Uses a jump rope	• Draws a triangle • Ties shoelaces • Prints letters, numbers, or words	• Counts to 10 • Speaks full sentences • Names coins &	• Independently dresses & bathes • Identifies real from pretend

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Explanation

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5	• Skips • Walks backward • Uses a jump rope	• Draws a triangle • Ties shoelaces • Prints letters, numbers, or words	• Counts to 10 • Speaks full sentences • Names coins & days of the week	• Independently dresses & bathes • Identifies real from pretend

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A 45-year-old woman brings her stepson to the office for a well-child visit. She never wanted children due to her unhappy childhood and wishes her marriage did not include being a stepmother to her husband's 5-year-old son. In the waiting room, the woman seems excessively concerned when the boy accidentally trips and is clearly uninjured. During the visit, she tells the physician that she adores the child and describes her elaborate preparations for his birthday party. Which of the following defense mechanisms best explains this woman's behavior?

A. Displacement
B. Projection
C. Rationalization
D. Reaction formation
E. Splitting
F. Suppression

Submit

A 45-year-old woman brings her stepson to the office for a well-child visit. She never wanted children due to her unhappy childhood and wishes her marriage did not include being a stepmother to her husband's 5-year-old son. In the waiting room, the woman seems excessively concerned when the boy accidentally trips and is clearly uninjured. During the visit, she tells the physician that she adores the child and describes her elaborate preparations for his birthday party. Which of the following defense mechanisms best explains this woman's behavior?

- A. Displacement (3%)
- B. Projection (5%)
- C. Rationalization (2%)
- ✓ D. Reaction formation (77%)
- E. Splitting (6%)
- F. Suppression (5%)

Omitted
Correct answer
D

77%
Answered correctly

02 secs
Time Spent

01/13/2020
Last Updated

Explanation

Key defense mechanisms	
	• Acting out: Expressing unacceptable feelings through actions • Denial: Behaving as if an aspect of reality does not exist • Displacement: Transferring feelings to less threatening object/person

Explanation

Key defense mechanisms	
Immature	• Acting out: Expressing unacceptable feelings through actions • Denial: Behaving as if an aspect of reality does not exist • Displacement: Transferring feelings to less threatening object/person • Intellectualization: Focusing on nonemotional aspects to avoid distressing feelings • Passive aggression: Avoiding conflict by expressing hostility covertly • Projection: Attributing one's own feelings to others • Rationalization: Justifying behavior to avoid difficult truths • Reaction formation: Transforming unacceptable feelings/impulses into the opposite • Regression: Reverting to earlier developmental stage • Splitting: Experiencing a person/situation as either all positive or all negative
Mature	• Sublimation: Channeling impulses into socially acceptable behaviors • Suppression: Putting unwanted feelings aside to cope with reality

Reaction formation is a defense mechanism in which an individual **transforms unacceptable feelings** or impulses into their **extreme opposites**. This woman does not want to be a stepmother, and her resentment toward the child is masked with declarations of love. Her negative feelings toward the child are transformed into oversolicitous behavior in response to his tripping and excessive preparations for his birthday party.

(Choice A) Displacement is the inappropriate transfer of feelings or impulses toward a less threatening object (eg, if this woman yelled at her dog instead of the child).

(Choice B) Projection involves attributing unacceptable impulses or behavior to another person or situation (eg, if this woman accused her husband of disliking the child).

(Choice C) In rationalization, an individual makes excuses for unacceptable feelings or behavior (eg, if this woman explained that she is much too old to be caring for a young child).

Mature	• Sublimation: Channeling impulses into socially acceptable behaviors • Suppression: Putting unwanted feelings aside to cope with reality

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(Choice B) Projection involves attributing unacceptable impulses or behavior to another person or situation (eg, if this woman accused her husband of disliking the child).

(Choice C) In rationalization, an individual makes excuses for unacceptable feelings or behavior (eg, if this woman explained that she is much too old to be caring for a young child).

(Choice E) Splitting is an immature defense mechanism in which an individual is unable to integrate mixed feelings (eg, if this woman alternately felt the boy was "all bad" and "all good"). It is commonly seen in borderline personality disorder.

(Choice F) Suppression is the voluntary withholding of unpleasant thoughts or feelings from one's mind in order to cope with reality (eg, if this woman acknowledged her resentment toward the child but chose to put it aside for the sake of her marriage).

Educational objective:
Reaction formation is a defense mechanism that involves replacing unacceptable feelings and impulses with their extreme opposites.

References

- Change in coping and defense mechanisms across adulthood: longitudinal findings in a European-American sample.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Defense mechanisms
Subject	System	Topic

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A 24-year-old man is brought to the emergency department by police and emergency medical services personnel due to aggressive behavior toward his girlfriend. She reports that he has no history of medical or psychiatric illness and that this behavior is new. During transport, the patient was combative and difficult to restrain. He currently appears agitated, disoriented, and confused and seems to be responding to internal stimuli. Temperature is 37.2 C (99 F), blood pressure is 170/96 mm Hg, pulse is 118/min, and respirations are 20/min. Nystagmus and ataxia are present on initial neurologic examination. The patient does not cooperate with urine toxicology testing. His symptoms begin to resolve after 8 hours in the emergency department. He has very poor recollection of the previous night's events. Which of the following substances is most likely causing the constellation of symptoms seen in this patient?

A. Cocaine
B. Diazepam
C. Heroin
D. Lysergic acid diethylamide
E. Methamphetamine
F. Phencyclidine
G. Tetrahydrocannabinol

Submit

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- A. Cocaine (7%)
- B. Diazepam (0%)
- C. Heroin (2%)
- D. Lysergic acid diethylamide (9%)
- E. Methamphetamine (8%)
- ✓ F. Phencyclidine (71%)
- G. Tetrahydrocannabinol (0%)

Omitted
Correct answer
F

71%
Answered correctly

02 secs
Time Spent

01/24/2020
Last Updated

Explanation

Acute drug intoxication		
Drug	**Class**	**Clinical features**
PCP (phencyclidine)	Hallucinogen	• Violent behavior • Dissociation • Hallucinations • Amnesia • **Nystagmus** (horizontal or vertical) • Ataxia
LSD	Hallucinogen	• **Visual hallucinations** • Euphoria • Dysphoria/panic • Tachycardia/hypertension
Cocaine	Stimulant	• Euphoria • Agitation/psychosis • **Chest pain** • **Seizures** • Tachycardia/hypertension • **Mydriasis**
Methamphetamine	Stimulant	• Violent behavior • Psychosis, diaphoresis • Tachycardia/hypertension • Choreiform movements • Tooth decay
		• Increased appetite • Euphoria

Cocaine	Stimulant	• Euphoria • Agitation/psychosis • **Chest pain** • **Seizures** • Tachycardia/hypertension • **Mydriasis**
Methamphetamine	Stimulant	• Violent behavior • Psychosis, diaphoresis • Tachycardia/hypertension • Choreiform movements • Tooth decay
Marijuana (THC, cannabis)	Cannabinoid	• Increased appetite • Euphoria • Dysphoria/panic • Slow reflexes, impaired time perception • Dry mouth • **Conjunctival injection**
Heroin	Opioid	• Euphoria • **Depressed mental status** • **Miosis** • **Respiratory depression** • Constipation

THC = tetrahydrocannabinol.

This patient's combative behavior, confusion, poor judgment, memory loss, and hallucinations, accompanied by nystagmus and ataxia on physical examination, are consistent with **phencyclidine (PCP)** intoxication. PCP is a hallucinogen that works primarily as an **N-methyl-D-aspartate**

THC = tetrahydrocannabinol.

This patient's combative behavior, confusion, poor judgment, memory loss, and hallucinations, accompanied by nystagmus and ataxia on physical examination, are consistent with **phencyclidine (PCP)** intoxication. PCP is a hallucinogen that works primarily as an **N-methyl-D-aspartate glutamate receptor antagonist**, as well as a monoamine reuptake inhibitor. PCP was originally developed as an anesthetic, but its use was discontinued due to its adverse effects in humans.

Moderate amounts of PCP cause **dissociative symptoms**, including detachment and withdrawal. At higher doses, it can induce agitation, **hallucinations**, and **violent behavior**. Ataxia and **nystagmus** (both horizontal and vertical) are other distinguishing symptoms of PCP abuse. Hospital urine toxicology screens usually test for PCP.

(Choice A) Signs and symptoms of cocaine intoxication include tachycardia, hypertension, blurry vision, euphoria, and agitation, typically lasting ≤1 hour. Ischemic effects (eg, myocardial infarction, stroke) can occur due to severe vasoconstriction.

(Choice B) The benzodiazepine diazepam is a central nervous system depressant that produces mild euphoria and relaxation and has significant abuse potential. Intoxication can cause mild amnesia, sedation, slurred speech, respiratory depression, hypotension, and bradycardia.

(Choice C) Heroin intoxication can produce euphoria, lethargy, and coma. Examination shows constricted pupils, decreased bowel sounds, low-normal blood pressure and heart rate, and life-threatening respiratory depression.

(Choice D) Lysergic acid diethylamide (LSD) is a potent hallucinogen with unpredictable effects, including euphoria, depersonalization, and visual illusions. Most patients are oriented and perceive that the effects are due to the drug ingestion. Nystagmus is not present.

(Choice E) Intoxication with the stimulant methamphetamine causes tachycardia, hypertension, agitation, diaphoresis, and hallucinations. Violent behavior may also be seen with its abuse, but nystagmus is less common. Methamphetamine intoxication typically lasts for up to 20 hours, longer than intoxication with PCP.

(Choice G) Marijuana is a cannabinoid that produces euphoria and perceptual distortions. Other findings include increased appetite, red eyes, slowed reflexes, dizziness, and impaired coordination. Nystagmus is not common.

Educational objective:
Phencyclidine (PCP) is a hallucinogen that causes dissociative symptoms, agitation, hallucinations, and violent behavior. Ataxia, nystagmus, and memory loss are other distinguishing symptoms of PCP abuse.

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Educational objective:
Phencyclidine (PCP) is a hallucinogen that causes dissociative symptoms, agitation, hallucinations, and violent behavior. Ataxia, nystagmus, and memory loss are other distinguishing symptoms of PCP abuse.

References

- Emergency department visits involving phencyclidine (PCP).
- Phencyclidine intoxication case series study.

Behavioral science	Psychiatric/Behavioral & Substance Abuse	Phencyclidine
Subject	System	Topic

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A 44-year-old man comes to the office due to low mood, impaired concentration, increased sleep and appetite, feelings of heaviness in his arms and legs, and loss of energy. He is having difficulty at work as he is overly sensitive to criticism. Although his boss has told him not to worry, the patient is concerned that his job is in jeopardy due to poor performance. His symptoms started 8 months ago without any clear-cut precipitating event. The patient received adequate trials of 3 different antidepressants without improvement and has been off of medication for the past several weeks. His physician is now considering electroconvulsive therapy (ECT). The patient declines ECT and asks to try another medication. The physician then considers phenelzine. The presence of which of the following additional symptoms would make the patient more likely to respond to this medication?

A. Auditory hallucinations
B. Decreased libido
C. Delusions
D. Memory impairment
E. Mood reactivity
F. Rapid speech

Submit

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A. Auditory hallucinations (14%)
B. Decreased libido (15%)
C. Delusions (7%)
D. Memory impairment (11%)
✓ E. Mood reactivity (46%)
F. Rapid speech (4%)

Omitted
Correct answer
E

46%
Answered correctly

01 sec
Time Spent

01/11/2020
Last Updated

Explanation

Monoamine oxidase inhibitors (**MAOIs**) (eg, phenelzine, tranylcypromine) are antidepressants that work by inhibiting oxidative deamination, thereby increasing the presynaptic availability of serotonin, norepinephrine, and dopamine. Due to their risk of severe adverse effects (eg,

Explanation

Monoamine oxidase inhibitors (**MAOIs**) (eg, phenelzine, tranylcypromine) are antidepressants that work by inhibiting oxidative deamination, thereby increasing the presynaptic availability of serotonin, norepinephrine, and dopamine. Due to their risk of severe adverse effects (eg, hypertensive crisis, serotonin syndrome), MAOIs are not considered first- or second-line antidepressant treatments. However, MAOIs are still useful in certain situations when other antidepressants fail. In addition to their role in **treatment-resistant major depressive disorder** (MDD), there is some evidence to suggest that they are superior to other classes of antidepressants in the treatment of MDD with atypical features.

MDD with atypical features is characterized by **mood reactivity** (ie, mood improves in response to positive events), **leaden paralysis** (ie, patient's arms and legs feel extremely heavy), **rejection sensitivity** (ie, overly sensitive to slight criticism), and the reversed vegetative signs of **increased sleep and appetite**. This patient is both treatment-resistant (failure of multiple antidepressant agents) and has atypical features, making him a good candidate for a trial of an MAOI.

(Choices A and C) The presence of psychotic symptoms such as hallucinations and delusions would be consistent with MDD with psychotic features. This subtype of MDD requires the addition of an antipsychotic as it is unlikely to respond to an antidepressant alone.

(Choice B) Many antidepressants, including MAOIs, have sexual side effects that can worsen preexisting sexual dysfunction. Bupropion and mirtazapine are antidepressants that do not cause sexual side effects.

(Choice D) Memory impairment would be a relative contraindication for use of an MAOI. Patients taking MAOIs must be cognitively intact and remember to avoid tyramine-containing foods and drug-drug interactions that could lead to a hypertensive crisis or serotonin syndrome.

(Choice F) Rapid speech is a possible manic symptom that would raise concern about the presence of mixed depressive and manic symptoms. Antidepressants, particularly MAOIs, are not indicated for patients exhibiting mixed features.

Educational objective:
Monoamine oxidase inhibitors are particularly useful in patients with treatment-resistant major depressive disorder with atypical features. Increased appetite and sleep, leaden paralysis, rejection sensitivity, and mood reactivity are hallmarks of the atypical subtype.

References

- Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders.
- Current place of monoamine oxidase inhibitors in the treatment of depression.

Explanation

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Behavioral science	Psychiatric/Behavioral & Substance Abuse	Depression
Subject	System	Topic

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A 48-year-old man comes to the office due to concern that his skin is excessively dry, red, and cracked. The patient explains that he washes his hands each time he touches something due to fear of contamination. He spends 3-4 hours a day washing his hands and showers multiple times daily. He was recently fired from his job after refusing to touch keyboards shared by coworkers and is worried that he will be unable to find employment. On physical examination, the palms are erythematous with peeling skin. Treatment of this patient's disorder is most likely to involve a medication affecting which of the following neurotransmitters?

A. Acetylcholine
B. Dopamine
C. Gamma-aminobutyric acid
D. Glutamate
E. Glycine
F. Histamine
G. Norepinephrine
H. Serotonin

Submit

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- A. Acetylcholine (0%)
- B. Dopamine (4%)
- C. Gamma-aminobutyric acid (3%)
- D. Glutamate (1%)
- E. Glycine (0%)
- F. Histamine (0%)
- G. Norepinephrine (2%)
- ✓ H. Serotonin (87%)

Omitted
Correct answer
H

87%
Answered correctly

01 sec
Time Spent

02/03/2020
Last Updated

Explanation

Obsessive-compulsive disorder	

Clinical features	• **Obsessions**
	  ◦ Recurrent, intrusive, anxiety-provoking thoughts, urges, or images
	• **Compulsions**
	  ◦ Response to obsessions with repeated behaviors or mental acts
	  ◦ Behaviors not connected realistically with preventing feared event
	• Time-consuming (>1 hr/day) or causing significant distress or impairment

Treatment	• Selective serotonin reuptake inhibitor • Cognitive-behavioral therapy (exposure & response prevention)

This patient's fear of contamination leading to compulsive washing rituals is consistent with **obsessive-compulsive disorder** (OCD). OCD is characterized by obsessions or compulsions, with most patients experiencing both. Common themes include contamination obsessions with cleaning compulsions; obsession with symmetry and compulsions involving ordering and counting; and fear of harm with checking compulsions (eg, stove off, doors locked). Patients with OCD typically engage in time-consuming rituals (>1 hr/day) that cause significant distress and/or functional impairment. Patients with washing compulsions may present with skin conditions.

Selective serotonin reuptake inhibitor (SSRI) antidepressants are considered first-line treatment for OCD. SSRIs block the reuptake of serotonin into the presynaptic neuron, leading to an immediate increase in availability of synaptic serotonin and a subsequent cascade of downstream neurobiological effects.

(Choice A) In the central nervous system, acetylcholine is involved primarily in arousal, memory, and learning. Degeneration of cholinergic neurons is associated with Alzheimer dementia.

(Choices B and D) There is evidence for dysfunction of the dopamine and glutamate (primary excitatory neurotransmitter) systems in the pathogenesis of OCD; however, neither neurotransmitter is a significant target of first-line medications.

(Choices C and E) Gamma-aminobutyric acid is the primary inhibitory neurotransmitter in the central nervous system and is involved in the anti-anxiety effects of benzodiazepines. Glycine is also an inhibitory neurotransmitter.

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(Choices C and E) Gamma-aminobutyric acid is the primary inhibitory neurotransmitter in the central nervous system and is involved in the anti-anxiety effects of benzodiazepines. Glycine is also an inhibitory neurotransmitter.

(Choice F) Histamine is a neurotransmitter involved in maintaining wakefulness and, as a result, drugs with antihistamine properties may be sedating.

(Choice G) Norepinephrine is a catecholamine involved in mood, anxiety, alertness, learning, and memory.

Educational objective:
Obsessive-compulsive disorder (OCD) is characterized by persistent, intrusive thoughts leading to repetitive, ritualistic behaviors. Selective serotonin reuptake inhibitors are considered first-line treatment for OCD and exert their effects by inhibiting serotonin reuptake.

References

- Obsessive-compulsive disorder: advances in diagnosis and treatment.
- Obsessive-compulsive disorder.